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ABSTRACT

This document includes papers and speeches presented at the National Conservation Education Association Conference. The papers are arrayed under the major topics of the conference: centers for environmental education (EE), energy, land use, leisure pursuits, natural history, networking, ongoing EE, special populations, and urban EE. Keynote speeches and opening remarks, committee reports, and a list of participants are included. (RE)

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AN ALLIANCE OF HOPE

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proceedings of the 26th NATIONAL CONSERVATION EDUCATION ASSOCIATION CONFERENCE

Pocono Environmental Education Center
Dingman's Ferry, Pennsylvania
AUGUST 12 - 16, 1979

SE 031 652

ENVIRONMENT, EDUCATION, ACTION: AN ALLIANCE OF HOPE

The Twenty-Sixth National Conference of the
Conservation Education Association

One recommendation of the United Nations Conference on Human Environment convened in Stockholm, 1972, was for organizations to "...take the necessary steps to establish an international programme in environmental education, interdisciplinary in approach, in school and out-of-school, encompassing all levels of education and directed towards the general public."

Strategies for the development of environmental education at the national level, including general environmental education of the public through formal and non-formal education, subsequently became an agenda item at the Intergovernmental Conference on Environmental Education in Tbilisi, 1977.

Environment, Education, Action: An Alliance of Hope, the Conservation Education Association's 26th National Conference, is viewed by conference planners as an effort by CEA to help implement strategies for the development of Environmental Education at the national levle.

For this CEA national endeavor, the conference planners conceived that the goals of environmental education:

> To foster clear awareness of and concern for economic, social, political, and ecological interdependence in urban and rural areas;
>
> To provide every person with opportunities to acquire the knowledge, attitudes, values, commitment, and skills needed to protect and improve the environment;
>
> To create new patterns of behavior by individuals, groups, and society as a whole toward the environment;

would be the conceptual framework toward which the energies of an alliance of hope would be directed.

A working hypothesis for the conference was that those of us engaged in real tasks which necessitate cooperation and supplied with some guidance, would form positive interpersonal, interaction skills and more positive feelings toward the environment. Our cooperative actions on the conference lead to new friendships and understandings. It is from the members of the conference planning committee, their cooperative efforts, and combined energies that the hope of Environmental Education Action became possible.

Dear Friends, thank you.

John J. Padaline
Conference Chairman

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THE CONFERENCE COMMITTEES . . . . . back cover

THE PROGRAM

SUNDAY, August 12

1:00 P.M.	Exhibit set-up	Main Building
3:00	Home Group Coordinators Meeting The home group concept is designed to facilitate communication. Upon registration, each participant was assigned to a home group which met several times during the conference to exchange information, discuss issues of common concern, and clarify questions about the conference design. The coordinator of each home group acted as liaison to the Conference Planning Committee.	Crafts Center
4:00	Registration opens	Main Building
5:30	Dinner	Dining Hall
7:30	"A Place to Grow" - - An audio-visual introduction to Northeastern Pennsylvania	Main Meeting Room
8:00	The Beethoven Choruses This multi-talented choral group provided a highly enjoyable social "kick-off" for the 26th Annual Conference. Founded in Bethlehem, Pennsylvania, to foster the music of their German heritage, the Beethoven Choruses are actually three entities: a male chorus, originating in 1891; a ladies chorus, originating in 1922; and a mixed chorus. Their repertoire includes light classics, German and American folk tunes, show tunes, and popular music.	Main Meeting Room

MONDAY, August 13

7:00 A.M.	Breakfast	Dining Hall
8:30-10:30	GENERAL SESSION I	Main Meeting Room

Presider: Richard J. Myshak, CEA President, Deputy Assistant Secretary, U.S. Department of the Interior

Welcoming Remarks: Jerry Howard, Assistant to the President of Keystone Junior College, La Plume, Pennsylvania

Jon B. Montgomery, Acting Superintendent, Delaware Water Gap National Recreation Area, National Park Service, Bushkill, Pennsylvania

Craig C. Chase, President, American Nature Study Society; Professor of Environmental Education, Slippery Rock State College, Pennsylvania

The Speakers: Walter J. Bogan, Director, Office of Environmental Education, U.S. Office of Education, Washington, D.C.

Alexander J. Barton, Program Director, Development in Science Education, National Science Foundation, Washington, D.C.

10:30 Refreshments — Tent

11:00 A.M. - 12:00 P.M. PROGRAM SESSION I

Forest Uses in Conflict — Front, Main Building
John H. Bitzer, Pennsylvania Bureau of Forestry

Land for Learning--The Nature Conservancy, Land Conservation through Private Action — Main Meeting Room
Cliff Emanuelson, Connecticut Chapter of The Nature Conservancy; Tamra Peters, The Nature Conservancy

Making a Bryophyte Herbarium — Cottage O
Otto Heck, Trenton State College, New Jersey

Environmental/Energy Conservation in the Instructional Program, K-12 — Classroom 3
Barry W. Jamason, New York State Education Department

The New York City Environmental Education Advisory Council: A Case Study in Successful Networking — Crafts Center
Ray P. Pfortner, U.S. Environmental Protection Agency

Investigating Environmental Issues in the Media — YCC 1
Gary J. Severson, U.S. Forest Service

Local School Development: The Human Environment — Classroom 1
Ernie Turner, New York Urban Coalition

Tayamentasachta—A Center for Environmental Studies — Classroom 2
Charles R. White, Greencastle-Antrim School District, Pennsylvania

Noon-1:00P.M. Lunch — Dining Hall

1:30-2:30 PROGRAM SESSION II

Environmental Education on the School Site — Biology Field Station
Nancy E. Christie, Project SITE, Chester County Intermediate Unit 24, Coatesville, Pennsylvania

Environmental Awareness Programs — Classroom 1
Peter A. Colangelo and Elisa Caravaglia, U.S. Army Corps of Engineers

People and Parks Require Commitment — Classroom 2
Thomas Dolan, Citizens' Advisory Council, Pennsylvania Department of Environmental Resources

Plants Under Stress—Caring for Trees in the Urban (and Suburban) Environment — Classroom 3
Jane Herrman, Morris Arboretum of the University of Pennsylvania; Patricia Schrieber, Pennsylvania Horticultural Society, Philadelphia

Fundamentals of Fishing — Front, Main Building
Will Johns, Larry Schaffer, and Stephen Ulsh, Pennsylvania Fish Commission, Harrisburg

	Teacher-Competencies--Environmental Education and a Model K-12 Program Robert W. Schwille, Pennsylvania Department of Education; Craig Chase, Slippery Rock State College; Beulah Frey, Fox Chapel School District, Pennsylvania	YCC 2
	Energy Education in Every Classroom Mary Theresa Webb, Conservation Ccunsultants, Sewickley, Pennsylvania	Main Meeting Room
2:30	Refreshments	Tent
3:00-4:00	PROGRAM SESSION III	
	A Community Approach to Creative Learning Environments Barbara Armstrong, International Playground Association	Crafts Center
	Investigating Environmental Issues in the Home J. E. Carroll, U.S. Forest Service	YCC 1
	A View From the Top Eugene Ezersky, Cornell University Cooperative Extension, New York	Biology Field Station
	Introduction to Land Use Planning Martha E. Munzer, Conservation Education Association	Classroom 2
	Does Energy Education Belong in Our Schools? Denise Olczak, Director, Energy Stewardship Program, Lakeview School District, Stoneboro, Pennsylvania	YCC 2
	Nuclear Energy: Information and Perspectives Bruce Wood, Westinghouse Electric Corporation	Classroom 1
4:00	Home Groups Meet	Various Locations
5:30	Dinner	Dining Hall
7:00-8:30	Open University	
	Siting and Landscaping a Home for Energy Conservation William A. Leber, State College, Pennsylvania	Classroom 3

OBIS — Crafts Center
Thomas F. Richardson, President, Delta Educators, Nashua, New Hampshire

Interagency Environmental Education Projects — Classroom 1
Elizabeth H. Smith, Saratoga-Capital District State Park and Recreation Commission, New York

Energy Education Program Design and Classroom Techniques — Classroom 2
Shaun Taylor, New Western Energy Show, Helena, Montana

9:00 American Nature Study Society Business Meeting — Room 1

TUESDAY, August 14

Tuesday was a day of optional field trips, both whole day and half day, to points of interest within the tri-state area. For those conferees who chose to remain at PEEC, a variety of hands-on, outdoor oriented learning experiences were available, including a special morning and afternoon program designed for the children of participants.

A brief description of field trips and PEEC outdoor sessions follows.

6:30 A.M.	Birdwalk	Front, Main Building
7:00-8:00	Breakfast	Dining Hall
7:45-8:15	Field Trips Depart	Main Building

Full-Day Trips

1. Delaware River Canoe Trip--This is a ten-mile canoe trip from Dingman's Ferry to Bushkill, Pennsylvania, that is perfect for both novice and experienced canoers. This particular stretch of the river is rich in history. Archaeological digs still reveal evidence of the Lenni-Lenape Indians that utilized this waterway hundreds of years ago. This scenic trip also displays the geologic and geographic significance of this unique, unobstructed section of the Delaware River; a variety of wildlife is frequently visible along the shores.

2. Brotherhood Winery/Bear Mountain State Park--Brotherhood Winery is located in Washingtonville, New York, fifty-five miles north of New York City in the heart of the Hudson River Valley. This is the oldest winery in the country and has the largest underground wine cellars. Free guided wine-tasting

tours tell of the history of local wine making and of the many varieties of wine produced. Bear Mountain is a year-round recreation area located within the Palisades Interstate Park and Recreation Area, forty-five miles north of New York City. Facilities open to visitors include: the Trailside Museum, which was founded in 1927 and exhibits the region's history, both natural and human; the Bear Mountain Inn, established in 1922; numerous well-marked nature and hiking trails, including the Appalacian Trail; and Hessian Lake, a deep mountain lake. This park and the land around it have a very long and colorful history which is well-displayed at the park's many education exhibits.

Half-Day Trips

1. New Jersey School of Conservation/The Pinchot Institute for Conservation Studies--The New Jersey School of Conservation is the largest residential center for environmental studies in the western hemisphere. Administered by Montclair State College, it comprises 240-acres surrounded by 25,000 acres of Stokes State Forest and High Point State Park combined. The school, located nine miles north of Branchville, New Jersey, boasts two completely winterized facilities on opposite shores of a spring-fed lake including a nature center, a library, meeting rooms, a fully equipped infirmary, kitchen and dining room, and housing for 270 persons. The School of Conservation is a National Environmental Study Area. The Pinchot Institute is located in the former home of the well-known conservationist, Gifford Pinchot. The 100-acre estate, partly forested in virgin white pine and hemlock, is called Grey Towers and is situated on a hill overlooking the borough of Milford, Pennsylvania. In 1963 Grey Towers was registered as a National Historic Landmark; it comes under the auspices of the U.S. Forest Service--the Bureau created by Gifford Pinchot in 1905. The Institute is currently organizing programs to further a better understanding of conservation through research, training, and conferences.

9:00-11:00 PEEC OUTDOOR SESSION I

Children's Program — Cottage 1

PEEC and Project KARE Staff, Blue Bell, Pennsylvania

Outdoor activities including hiking and sports were conducted using PEEC facilities.

Fundamentals of Fishing — Front, Main Building

Will Johns and Stephen Ulsh, Pennsylvania Fish Commission

A mini-course showed participants how they can teach basic fishing techniques to students. A filleting demonstration followed with an opportunity to cook and eat the panfish participants have caught.

Sculpture — Crafts Center

Bob Russell, Jersey City State College, New Jersey

Participants learned how to sculpt using a vermiculite and cement compound. The material lends itself to the creation of bulky figures such as eagles and owls.

Wild Foods — Main Meeting Room

Helen Ross Russell, American Nature Study Society

On an ethnobotanical stroll participants located and identified wild plants that are eaten by people of various cultures. The activity included some collecting, nibbling, simple preparation, and sampling of cooked items. Emphasis was placed on ecological niches on preserving the stand for future meals and on safety in positive identification and use.

11:00 — Refreshments — Tent

12:15 P.M. — Lunch — Dining Hall

1:00 — Field Trips Depart — Main Building

1. Peters Valley Craft Village/Millbrook Village/Thunder Mountain--Peters Valley is a non-profit craft school located in the picturesque Delaware Water Gap National Recreation Area of northwestern New Jersey. Operated in cooperation with the National Park Service, this residential community is staffed by professional craftspersons in ceramics, textiles, fine metals, blacksmithing, woodworking, and photography who open their studios to visitors for instruction. In 1832 Millbrook Village grew up around a gristmill that was built over a tributary of the Delaware River. Located within the Delaware Water Gap National Recreation Area, this village is representative of a past way of life. On view to the public are antiquated structures including a hotel, black smith shop, general store,

gristmill, church, and residences of former members of the community. Some of these buildings were brought from nearby areas to help recreate the scene that once existed at Millbrook. Thunder Mountain is an environmental and vocational education center converted from a 600-acre dude rance. Located within the Delaware Water Gap National Recreation Area between Layton and Wallpack Center, New Jersey, the land and buildings are open for use by public and private schools. The center offers a variety of environmental, recreational, and special education programs that utilize diverse habitats including tilled farm acres, marshes, ponds, streams, a lake, coniferous and deciduous woods with developed nature trails, and the nearby Delaware River.

2. Delaware Water Gap/Slateford Living Farm--The Delaware Water Gap called the "gateway" to the Delaware Water Gap National Recreation Area, is the dramatic break in the Kittatinny Ridge that was created by the River down cutting through the ridge for many thousands of years. Three major overlooks provide an excellent opportunity to view the geologic beauty of the area. CEA visitors heard a description by a National Park Service Interpreter. An excursion on the short hiking trail at Arrow Island followed. The famous Appalachian Trail descends from the crest of the ridge into the Gap at this point. Located in Northampton County, Pennsylvania, within the Delaware Water Gap National Recreation Area, Slateford Farm is a partially reconstructed nineteenth century farm that is representative of the self-sufficient family style of farming. Buildings on view to the public include the original cabin, farmhouse, springhouse, wagon shed, and slater's shanty. Information and artifacts are on display at Slateford pertaining to the quarrying of slate at this site.

1:00-3:00 PEEC OUTDOOR SESSION II

Children's Programs — Cottage 1
PEEC and Project KARE Staff

Habitat Management — Main Meeting Room
Rich Mellon, Washington Crossing State Park

This activity presented a botanical approach to habitats and their management. By examining soil, competion, and light and moisture levels, an understanding of individual habitats management and land use practices was developed.

Fungi — Front, Main Building

Frederick T. Tetlow, Ogdensburg School District, New Jersey

An introduction to the variety of fungi growing in the PEEC area was presented in a field workshop, emphasing the role played by fungi in the economy of the woodland habitat. Positive identification of the Genus Amanita was a prime concern of this session and some common edible mushrooms were identified as a means of comparison.

Gyotaku--Japanese Fish Printing — Crafts Center
(Pronounced Ghio-ta-koo)

Carol Padalino, Delaware Valley School District, Matamoras, Pennsylvania

Participants had the opportunity to try their hands at this age-old Japanese technique of fish printing, which is used to record information on the physical features of the fishes. The art of Gyotaku may also add interest to a study of the external anatomy of fishes.

3:00	Refreshments	Tent
5:30	Buffalo Trow	Picnic Grove
6:30	Home Group Leaders Meet	Crafts Center
7:30	Square Dance	Main Meeting Room
8:30	Film Festival	Room 1, Main Building
	Ten Best Slides Sharing Session	Room 3, Main Building
9:30	Home Groups Meet	Various Locations

WEDNESDAY, August 15

6:30 A.M.	Birdwalk	Front, Main Building
7:00	Breakfast	Dining Hall
9:00-10:00	PROGRAM SESSION IV	

	The Potential for Environmental Teaching/ Interpreting in the Urban Setting Mary Lynne Bowman, ERIC/SMEAC	Crafts Center
	Pennsylvania Alliance for Environmental Education (PAEE): Past, Present, Future Richard E. Davis, President-elect, PAEE	Biology Field Station
	Gift From the Sun Walter A. Jones, Somerset County Park Commission, New Jersey	YCC 2
	Public Education Efforts in the U.S. Fish and Wildlife Service Ed McCrea, U.S. Fish and Wildlife Service, Division of Wildlife Refuges	Classroom 1
	KARE in the National Diffusion Network Alan Sexton, Project KARE, Blue Bell, Pennsylvania	Classroom 3
	Environmental Studies and Emotionally Disturbed Adolescents Patricia A. Tarashuk and Robert A. Simmons, Fair Oaks Hospital, Summit, New Jersey	YCC 1
	Environment: Sound Economics or Lost Cause? Arthur Watres, Lacawac Sanctuary	Classroom 2
10:00	Refreshments	Tent
10:30-11:30	PROGRAM SESSION V	
	Energy Conservation Education in Schools Harry T. Barnes, Jr. and Dawn G. Lennon, Pennsylvania Power and Light Co., Allentown, Pennsylvania	Classroom 1
	A Mountain Experience Jim Brett, The Hawk Mountain Sanctuary, Kempton, Pennsylvania	Classroom 2
	Working with Special Education Students in the Out-of-doors Gary E. Christenson, New York State Outdoor Education Association	YCC 1
	Robbins Park for Environmental Studies: Planning, Development and Implementation John Cote, W. R. Her, Helen Fey, Dean Thompson, Upper Dublin School District, Ft. Washington, Pennsylvania	Tent

Conservation Education for the Elementary Student — YCC 2
Kenneth E. Frazier, Project ECO, Ames, Iowa

Tinicum National Environmental Center — Crafts Center
Dick Nugent, U.S. Fish and Wildlife Service

Non-formal Environmental Education for Non-captive Audiences — Biology Field Station
Thea Teich, Carnegie Museum of Natural History, Pittsburgh, Pennsylvania

Fungi — Front, Main Building
Frederick T. Tetlow, Ogdensburg School District, New Jersey

The Development of Ecology Island (ECO Island) — Classroom 3
Timothy Toy, Grand Island School District, New York

11:30 Home Groups Meet — Various Locations

12:00 P.M. Lunch — Dining Hall

END OF EXHIBITS

1:30-2:30 PROGRAM SESSION VI

Using the Field or Vacant Lot as a Learning Laboratory — Front, Main Building
Harry F. Betros, Environmental Education Advisory Council

Doings in Ohio — YCC 1
Margaret Brock, Hillsboro, Ohio

Everyone Will Help: An Environmental Education Program — Crafts Center
Donald Perkins, Houston School District, Lantrip Ecology School, Texas

Peer Group Instruction--An Alternative to Environmental Education — Classroom 2
William R. M. Ritter, David Waltman, John Cote, Dean Thompson, and Ruth Almond, Upper Dublin School District

Wild Foods — Main Meeting Room
Helen Ross Russell, American Nature Study Society

California Interagency Project — Classroom 3
Rudolph J. H. Schafer, California Department of Education

2:30 Refreshments — Tent

3:00 GENERAL SESSION II — Main Meeting Room

Presider: Richard J. Myshak, CEA President

The Speakers: Richard L. Stanton, Director, Mid-Atlantic Region, National Park Service, U.S. Department of the Interior

John J. Kirk, Director, New Jersey School of Conservation, Montclair State College, Branchville, New Jersey

4:30 CEA Business Meeting — Room 3, Main Building

5:00 Home Group Leaders Meet — Crafts Center

7:00 Annual Banquet — Main Building
Presentation of Awards

Creative Arts Team Presenting--Tower of Babble: A modern day allegory focusing on the problem of inadequate communication in our public schools. Commissioned by the New York Urban Coalition, the show seeks to dissolve the barriers between constituencies which impede positive communication.

The Creative Arts Team is the resident educational theatre company at New York University. Members of C.A.T. are both actors and teachers who develop original theatrical presentations for all age levels, through historical investigations and ensemble improvisation. Their provocative, vital brand of theatre serves as a catalyst for thought and discussion.

THURSDAY, August 16

6:30 A.M. Birdwalk — Front, Main Building

8:00 Breakfast — Dining Hall

Cabin Clean Up

Departure

PRESIDENT'S ADDRESS: Richard J. Myshak

Last year - at Logan Utah, we celebrated our Silver Anniversary. The Proceedings of that milestone event recall the pride I expressed in the accomplishments of CEA during its first 25 years as a leader in conservation education. I also reflected on the influences and impacts of some of CEA's greatest leaders intellect and foresight - giving direction to those of us who have followed in their footsteps.

This annual conference marks the 26th year in our quest to reach our next major milestone - our golden anniversary. Last year, one of this world's most emminent educators, Dr. Paul Brandwein, challenged us to make that forthcoming celebration more significant than the anniversary we were celebrating. He called for us, with his guidance and assistance, to assure the young people in the 8th and 9th grades the opportunity to benefit from a course of study grounded in the sciences, social studies, and humanities -- full well recognizing that the idea may not be new—only the events and opportunities are new. He proposed that such a course of study be called EKISTICS. We accepted that challenge full well realizing that it would call upon each and everyone of us to devote our fullest measure of knowledge, wisdom, and effort in fulfulling that noble endeavor. At this time, I am proud to say - we have begun, not at a snails' pace - but at a run. Bill Hammond will report on this effort at our annual meeting Wednesday afternoon.

Others have also been performing and producing at an equally fast pace - if not faster. Jack Padalino, his staff, and literally hundreds of PEEC's friends have struggled for two years to offer to you an opportunity during the next few days to form "An Alliance of Hope". This setting high in the Pocono Mountains affords us a peace and tranquility so many of us experience too infrequently. Many of you who are familiar with the history of this facility also know that other alliances were consummated or begun here. Jack, Al, Al, and all of you others who worked so hard - our most heartfelt thanks - You are among CEA's greatest.

We have much to do as we look to the future. Your officers, Board and CEA members have worked with great intensity to provide each of us an opportunity to learn and to share. You have chosen your leaders well. Although difficult to control - somehow, amidst all the confusion I create theyexcell. We will lose some because their terms have expired - but you have also elected equally talented and dedicated leaders to carry on. We will miss the retiring members and look forward to many fond and contributing experiences with the newly elected members. And then there are those who accepted the invitation to be a candidate for election - but failed to succeed. They deserve our appreciation - for they, like those elected, were invited because of their known achievements, leadership and wisdom.

This is your annual conference. Jack and all his little PEEC's, your officers and board, stand ready to assist you in any way possible.

KEYNOTE ADDRESS: The Sources and Resources of Environmental Education

Alexander J. Barton, Program Director, Development in Science Education, National Science Foundation, Washington, DC 20550

Most of us take for granted experiences which are part of everyday living for us, but which would have been miracles to our grandparents. My own mother was born in an age of kerosene and gas lamps, horses and buggies, before household electricity or telephones. Yet, she and I sat in our living room together and watched a human being--a person like ourselves--climb out of a spaceship and walk across the face of the moon. We actually watched him, up close and in real time--while he was really doing it.

These modern miracles of transportation and of communication have both changed the environment in which we people live and also our perception of it. Let me say that again--modern technology has wrought two kinds of changes--real changes by which the environment has become something different than it was; and perceptual changes--changes by which our understanding of the environment is what has changed. Both have enormous implications for modern life, society, and education.

Ours is the first generation in the history of the human race in which ordinary people have viewed the earth from stratospheric altitudes. When I was a kid, the National Geographic Society was reporting the pioneering stratospheric balloon flight. Hardy adventurers in down-filled space suits with primitive breathing apparatus risked life and limb to bring to the Society's magazine pictures of earth from ten miles up. I used to love those pictures of a seamed, wrinkled planet with its marvelous tree-like tracings of streams and valleys and rivers. You've nearly all seen this marvelous spectacle, thousands of twiglike tributaries flowing together to form 100 creeks, which in turn open into ten little rivers and finally one great river. It's a god-like view of earth. No Moses atop an ancient Sinai nor even Zeus atop Olympus ever saw such a sight. Yet, thousands of blasé ordinary Americans every day pay $2 to rent earphones and see a movie rather than watch out of their airplane window as an entire continent unfolds beneath them.

This well known drainage pattern, whereby surfacial water is gathered together into streams and then delivered to the ocean--(stop and visualize for yourself the familiar twig, branch, limb, trunk, arrangement)--this familiar pattern is the basis of an analogy I should like to try to draw with you all this morning as we think about environmental education.

Conservation education is one of the mighty tributaries that forms the environmental education river here in America. Stretching back more than 100 years, and drawing from the wellsprings of Adler, Pinchot, Roosevelt, Seton, Muir and a host of others, it bid Americans to look realistically at the venerable natural endowment of our country, to realize their finiteness, and to learn to use them responsibly. At first, the principal foci were forests and wildlife. But as time went on and fresh threats were recognized, the movement broadened to include rivers and lakes and their aquatic

inhabitants; prairies and grasslands; the soils which nourished them all; their minerals and air and the mighty oceans themselves. The illimitable seas of water and air--how our grandparents would wonder that a time actually had come when we had to worry about even their health and safety, in the face of an endlessly polluting human organism.

One of the key contributions that the Conservation Education movement traditionally has poured into the main stream of environmental education is the notion of an environmental ethic--the noble concepts of responsibility, stewardship--the "oughts" and "ought nots" of environmental education which remind twentieth century humanity that its power to despoil the earth does not confer a right to do so.

But conservation education is not the only stream that feeds environmental education--another major tributory for many, many years has been outdoor education and recreation. The hunters and fishermen may, to some eyes, be very different breeds from the birdwatchers and turtle chasers (the nature study enthusiast represented here in this meeting) but the similarities always have outweighed the differences. There is no contradiction for instance in the fact that my friend, Tom Kimball, rose to his present position of high influence as Executive Director of the National Wildlife Federation by climbing a ladder of increasing responsibilities in State game agencies. Fortunately, only a little fringe of "keep it always like it is today" environmentalists refuse to share fellowship with those of us who believe that the environment always has been a dynamic--not a static entity--those who see our responsibility as one of keeping the forces of use and replenishment in a dynamic balance.

If this morning were longer, we could think about our other brothers and sisters who have contributed their special awareness, concern and knowledge of the marine environment, of energy usage and conservation living systems, and most of all--of the man-made environment in which most human beings spend the vast majority of their lives.

My friend and colleague, Walter Bogan, has been soundly condemned in some environmental circles for emphasizing the importance to people of the people environment, but who can deny that our traditional conservation movement so long emphasized the natural environment to the exclusion of concerns over cities and neighborhoods and factories that some rebalancing was both necessary and timely? Our children and our general citizenry need to understand both the world of nature and the man-made world if they are to have a balanced environmental understanding.

Twenty-two months ago, I was one of fifteen Americans who gathered in Tbilisi--the capital of the Georgian Republic of the U.S.S.R.--to meet with representatives of 67 other nations to draft a world-wide strategy for environmental education. One of the things we discovered there is that we, in the United States, our Canadian neighbors and a few western Europeans are the only people on earth who so emphasize the world of nature that we virtually ignore the world of man. It came to me as a bit of a shock to have the representatives of the Nordic nations--Sweden, Norway, Denmark and Finland--tell us how deeply and sensitively their environmental educators have thought about the problems of the industrial environment. The Greek delegation insisted that the conference recognize the importance of the time dimension in environmental studies--of seeing man and nature in the third dimension of historic time.

Friends from the third world--the "South"--the developing nations subjected us to an icy shower of reality when they said quite plainly that

their primary concern was not and could not be the preservation of game herds, but the control of starvation and human diseases when they showed some exasperation over the western idea that they should postpone the development of mines and the exploration of other resources in the name of conservation when only the sale of these products could provide the money they needed for pure drinking water and schools and improved health care. As they insisted that the needs of their people had to be given priority over the needs of their wildlife, I, for one, was less sure that I knew how much should be paid in human suffering to preserve the last Asiatic lions of the Gir Forest, or gavials and salt water crocodiles, or dwarf water buffalos (anoa) or orangatangs.

What was clear was that the issues had to be debated, the decisions made, the people mobilized and the programs initiated now--by us--in our day. The issues will not wait. Technological progress and its often unforseeable impacts proceeds at an increasing pace. Everyday, some of yesterdays options are foreclosed forever.

The organizations and major forces in American society have heard the Carson warning. Private sector organizations such as those to be discussed at this meeting in the sessions devoted to the Alliance for Environmental Education have adopted action programs in their own chosen areas of interest. Local school districts and state governments are increasingly devoting resources of manpower and money to the environment--to its responsible management and preservation, and to education regarding it.

Your Federal Government is taking action on so vast a scale that few of us even comprehend them. President Carter's recent action in sequestering thousands of square miles of Alaskan wilderness for future generations will go down in history as one of the most momentous conservation decisions of all time. As our federal interagency environmental education group meets every month or two in Washington, we hear constantly of imaginative and promising new initiatives being undertaken by most of the major departments--Interior, Agriculture, Commerce, State, Defence, HEW, Transportation, not to mention the Presidents' Council on Environmental Quality, the Environmental Protection Agency, NASA, and my own National Science Foundation.

As many of you know, I head a small staff of six professionals charged with improving science education in the U.S. by exploring and developing new and improved instructional materials and methods. For more than fifteen years, substantial fractions of our total efforts have been devoted to environmental education. Among the first of these were the highly influential BSCS high school biology texts, including the famous ecologically-centered Green Version. A well intentioned social sciences program called MACOS backfired on us badly, but as soon as we began to recover from it, we supported an engineering and technology-centered middle-school program called The Man-Made World. Without attempting to name them all, I should at least mention more recent products such as OBIS--the Outdoor Biological Instructional Strategies--for people in informal, out-of-school settings. This program has met such good acceptance that we currently are doing sister programs at the Lawrence Hall of Science in the Physical sciences. A ninth-tenth grade program in Crustal Geology is nearly finished, as is a new junior high school program from BSCS called HSP--the Human Sciences Program--designed to help adolescents understand themselves and their world better through an integrated approach to the life and behavioral

sciences. The Florida State University's ISIS team is publishing through Ginn and Company a modularized individualized intermediate school science program specially designed with the needs of the average learner in view. A group at Colorado Springs is bringing environmental and other current issues in science to the senior citizen, while the Chicago Museum of Science and Technology is experimenting with methods to capture the interest of pre-schoolers during family visits to museums. Frank Oppenheimer at the Exploratorium is being supported to export his special genius with interactive exhibits to other museums nationwide. The childrens' Television Workshop of Sesame Street fame is hard at work on a public TV science series aimed at middle schoolers. We're even bringing environmental ethics into the progressional training of civil engineers--preservice and in-service. Solar energy technician training is being pioneered in Corsacara, Texas. More experiments with teacher training programs--some for the elementary school generalists and some for the high school specialist--are going forward than I could possibly name. In short, environmental education is competing more effectively and successfully each year for NSF curriculum development money, and the agency from its carefully neutral posture is delighted to see this trend develop.

We live in a heady, exciting age. Mariners in the olden days of sailing ships dreaded the doldrums where a vessel could be becalmed for weeks on end until food and water supplies ran out and the crews perished. Environmental education is in no doldrums. Our current state is more like an unforgettable experience I had a few years back during an ecological reconnaisance of some substance--hunter Eskimo villages along the Chuckchee Sea. We were flying along the coastline, 1,000 feet above the tops of steep cliffs that dropped abruptly into the sea, when three violent squall lines from the Arctic Ocean bore down upon us. The plane shuddered as the first squall hit us. Greg, the bush pilot pointed below us to a point where the cliff line bent in to form a small, steep fiord-like harbor. All the force of the storm was funneling the winds into that narrow passage between the cliffs, and solid chunks of water the size of houses were being torn from the surface of the sea and carried upward 50 and 100 feet before being hurled against the rock walls. I had seen Venturi effect in the physics laboratory, but never before in nature, and it was hair-raising. Greg thought so too. His finger topped an anemometer dial that recorded wind speeds of 130 knots outside the plane. "Let's get out of here!" he exclaimed. Putting our marvelous little Canadian "Otter" into an 11,000 horsepower climb, he took us up and over the squall line into the quieter air above.

The environmental education climate today is something like that arctic squall. Enormous forces are unleashed and all around us is a wild chaos. But believe me--there is energy there. If only we have the wits and wisdom to channel these forces into constructive progress, there's virtually no limit to how fast and far out enterprise can go. Better the heady danger of our day than to be becalmed. Let each of us vow to grab hold of the wind and use it to move our piece of the environmental education effort along toward the worldwide goal of responsible environmental citizenship. Thank you.

KEYNOTE ADDRESS: The Environmental Education Program

Walter Bogan, Director, Office of Environmental Education, U.S. Office of Education, Washington, DC 20202

Good Morning. It's a pleasure to be here today at the Conservation Education Association National Conference. I'd like to spend some time speaking about the Environmental Education Program, which is administered by my office. As you doubtless know, the Program was authorized by the Environmental Education Act of the U. S. Congress, which was viewed and continues to be a critical component of our national effort to address environmental problems and issues.

The Environmental Education Program assists organizations and institutions in developing educational resources that contribute to understanding of environmental issues as they relate to policy, social, cultural, and economic (i.e. quality of life) concerns. More specifically, the program:

provides direction, technical guidance and financial support (grants) to a diverse and growing community concerned with developing effective and enduring environmental education;

monitors and assesses overall progress and identifies new development needs as the field evolves;

supports development efforts (contracts) to meet major needs, and modifies and updates the long range development strategy for the program in accordance with the results of such efforts;

disseminates information about the status of the field and facilitates the selection and use of current resources and information in environmental education development efforts.

Successful environmental education as defined by the Environmental Education Act is a life-long educational process that achieves all of the following:

A = AWARENESS

The capacity to perceive and anticipate less obvious or less immediate problems and issues that result from interactions within the total environmental system, which includes people. In many instances, less obvious or immediate problems are the result of secondary or tertiary impacts of these interactions.

B = BALANCED PERCEPTION

The ability to objectively assess conflicting facts, beliefs, values, and needs, and to act or make decisions in recognition and appreciation of these differences. Appreciation of the fact that a broad range of factors must be considered in resolving environmental problems and issues and that acceptable courses of action in many, if not most, instances must be negotiated.

C = COGNITION/LEARNING

Knowledge about the complex interrelationships that constitute the structure and nature of problems. Ability to obtain fuller knowledge so that action or decisions will be informed by what is known or knowable. In this regard, the need to acquire understanding of the urban environment, the needs of the people who reside in it, and the interrelationships that determine its quality, was cited by the Congress as a priority area of concern.

D = DECISION-MAKING

Understanding of and respect for society's decision-making mechanisms. Knowledge, ability, motivation and willingness to participate in an informed was in decision-making, thus to fulfill the responsibilities of citizenship.

A + B + C + D = EE

We must continue to seek effective ways of providing to the student or learner (a) a functional understanding and appreciation of his/her cultural inheritance, (b) the ability to contribute positively to the contemporary world and to the future of society, and (c) the ability to qualify for meaningful participation in society in the future. To achieve this, we must continue to seek effective ways of organizing knowledge and learning experiences so that understanding of the complex interrelationships that determine the quality of life now and in the future can be achieved; so that, among other things, our capacities for pattern perception, dynamic analytic skills, creative and anticipatory problem-solving skills, respect for self and others, and our conflict resolution skills are enhanced.

Organization of knowledge and learning experiences for these purposes requires not only the synthesis of what is known or knowable through the various academic disciplines and subject fields, but must also incorporate what is known or knowable from people, the community, the society--the larger environment--in which learning takes place. This is critical if education about the environment and, hence, about the quality of life is to be relevant and responsive to the needs of society, even as they change over time.

Through the Environmental Education Act, which permitted assistance to mutually supportive grant and contract activities, significant progress has been made in meeting some of the more complex development needs of the field as a whole as well as in assisting meaningful improvements in environmental education practice in over 700 sites throughout the country.

In 1974, the Office of Environmental Education published regulations and initiated a developmental strategy which have resulted in the following:

EE activities have moved beyond the promotion of general awareness of the more obvious or immediate environmental problems to that of increasing awareness of the less obvious and immediate problems.

EE activities have addressed the need for a "balanced" perspective in dealing with any given problem or issue.

EE activities have focused on the requirements and methods for effectively portraying and communicating complex interrelationships (some of these are being piloted now).

EE activities have contributed to the development of the understandings needed for informed citizen participation in decision-making.

The results of activities supported through the Federal program have been assessed, and current needs in the field have been clarified.

The results of activities supported through the program are now available to the public through the major appropriate dissemination channels and from the program.

The results of significant work in the field are being used by both EE practitioners and developers. In addition, practitioners and development experts continue to collaborate in identifying, performing, and refining development work needed by the field.

New modes of technical guidance and dissemination which are required to effectively support development or continued improvement of efforts to achieve successful EE have been identified. (These were derived, in part, from the results of highly successful National Institutes which were held for program grantees in 1977 and 1978.)

Information on developments in the field as well as results of program efforts are shared on a regular basis with other Federal agencies. Ways in which the diverse resources of federal agencies can be used in development of successful EE are being identified. Such resources include technical/scientific information and expertise, land holdings and experience in the use of these lands for environmental awareness development, and in some instances, funds.

In addition to the above, several environmental education projects have accepted the challenging tasks of organizing the components of successful EE and of effectively delivering it in comprehensive form in operational settings. For example, a pilot regional environmental education system is being designed, through a collaborative effort which involves several institutions and organizations, as well as the public, in the region served by the TVA. The TVA was the initiator and serves as principal facilitator of this project.

Thus far, the findings of research work that has been completed or that is in progress, and the perceptions and experiences that have been shared by practitioners and others suggest that the following factors should be considered in determining the next steps.

> All of the components of successful EE must be brought together and made operational. Generally, this will require the development and implementation of "comprehensive" programs.
>
> Such "comprehensive" programs will require local initiative assisted through broad-based resource networks that are regional in scope. Resources would include materials, information, people, and methods.
>
> The programs will require and should facilitate a high level of target group participation in all phases of the activities, including planning, design, implementation, and assessment.
>
> Continuation of the programs will require the establishment of enduring networks of people and institutions committed to the long-term improvement of environmental education.
>
> The programs must encompass mechanisms for coordination and for continued improvement as needed.
>
> The programs should result in the infusion of successful EE in the regular curricula or activities of the total education system. The total education system includes all of the institutions and organizations that provide formal and nonformal education for adults and youth/children on a continuous or recurrent basis.

You, as members of this distinguished Association, have at your disposal and have used meaningfully the vehicles to achieve this educational program so necessary to the national effort of which I speak. I salute you and hope for your continued successes. It will be through organizations such as CEA that the environmental understandings so needed for our survival will be developed.

Thank you.

KEYNOTE ADDRESS: An Environmental Education Strategy for Teachers

John J. Kirk, Director, Montclair State College, New Jersey
School of Conservation, Branchville, NJ 07826

It is a pleasure to be here this afternoon in this lovely setting and I would like to congratulate Jack Padalino and his staff and all the members of the program committee for the excellent arrangements for this conference. The theme that I would like to pursue this afternoon is An Environmental Education Strategy for Teachers. Last evening I took your program Environment, Education, Action: An Alliance of Hope and I read it through as a professional in the field and became very very excited about all of the offerings. I could not help but feel a sense of frustration if I had been here trying to choose which of the sessions I would like most to attend since they all sounded so exciting. It was a matter of intellectual intoxication. There was so much there relating to EE. So I know how you must feel at this point, having had the opportunity and the privilege of participating in such an exhilerating experience. I then decided, however, that I would try something different. I picked up the program and I read it once again, not as a professional in the field, but as a classroom teacher. Not the type of classroom teacher who attends a conference like this, but a classroom teacher who may have as their only experience in the out-of-doors recess duty two days a week. And, in reading through the program the second time from this prespective, I once again felt a sense of frustration and, perhaps, a little anxiety and fear. For, as I read through I wondered how I could ever implement and augment this material into my series of classroom experiences. What format would I use? How would I do it? Could it be done at all? What is the answer? There is a sense of urgency; I could realize that. There is an abundance of material; that was self evident. But there seemed to be no way to use it or to make sense out of it in my little classroom, in PoDunk Falls somewhere.

I sometimes think that we, as professionals, in our enthusiasm and our zeal, tend to confuse and bewilder teachers rather than helping them to see how they might accomplish the lofty goals and purposes of EE. In fact, I sometimes think we make them feel very inadequate if they do not have an EE message in every lesson they offer in their classroom, which of course is ridiculous and impossible. Sometimes I think that we, as professionals, fail to realize that teachers must stay within the system. In New Jersey we have a program that is called Thorough and Efficient education. I am not quite sure what it means, except that it does prevent the teachers from teaching as much as they might because they also have to function as filing clerks, as they check off the basic skills and maintain the enormous piles of records. We as professionals in conservation and environmental education must never forget that the classroom teacher

still has to teach additional material. The cognitive material has to be there. Whether it is for a thorough and efficient program or for a regency exam or for whatever purpose, perhaps to prepare the youngsters to pass the SAT's or something else that is so very important.

What does this mean then to us, or what should it mean? It means that we have to assist the teachers in developing an organizational structure and format that makes sense and neither forces them nor demands them to compromise or dilute that which must be done in their role as a classroom teacher. We ought to suggest that a few lessons a week would be more than adequate. I have told many teachers that if, in an entire week, they could have two experiences with an environmental message they would be doing more than ninety percent of the teachers in this country. I have also told them not to be too concerned that everything they do as a teacher relate specifically to the development of an environmental awareness. Because, you see, we can be guilty of an overkill. Steak is delicious, but I wouldn't want it for breakfast everyday. And sometimes I feel that we as professionals tend to be more Catholic than the Pope, in what we attempt to pass along or suggest to classroom teachers.

I think it might be better to recommend to teachers that, in addition to those one or two lessons a week, they try to live their lives with more of an environmental focus, because most attitudes are caught, not taught. Perhaps it would be helpful if we could get teachers to use or to have their students use both sides of a sheet of paper before they throw it away. Simple little things like this are just as important as some of the very elaborate curriculum materials that all of us in this room have either seen or worked on. What we need, then, for all of the wonderful materials that have been developed over the last few years is an organizational structure: something that teachers can begin to see, feel and understand; something that is part of the world that they know; and something that will help them to feel comfortable.

Over the years we have evolved at the School of Conservation an organizational structure which I would like to share with you, not because I believe it is the best or the only, but it <u>is</u> one which seems to work. And this is after working with something like 150,000 children and perhaps 10,000 to 12,000 teachers. We try to point out to our teachers that environmental experience can take place in basically four learning environments and they are all readily available. One that the teachers are most familiar with is the classroom itself. There are many things that can take place in the classroom that will deliver an environmental message. Not every lesson should have such a focus, but some should. Then the general attitude of conduct that takes place in the classroom can also develop this environmental awareness, such as with the lights, the paper and other things.

The second environment for learning that we suggest is the utilization of school grounds. As you know, in most schools the grounds are used for recess and for parking the teachers' cars. What I suggest is working with the school administrators and school boards, so they will see the true potential of school grounds, building on some of the work done by Bill Stapp in the early 1960's and Herb Wong in the most recent past at

the University of California Laboratory School at Berkeley. We too are trying to make a modest contribution by offering a graduate course for teachers taught by Jerry Schierloh of our faculty, demonstrating how school grounds can be converted into environmental labs. Another area relating to the School that has excited me although I haven't been able to do anything with it is the idea of converting the roofsof city schools into environmental labs. This is an enormous area and it is wasted space right now, but there are many exciting activities that could be conducted on the roofs of schools. Another thought that I find rather appealing is the fact that you don't have to be quite so concerned about vandalism because no one can get up there. So, using the school grounds and the roofs of the schools as environmental laboratories would be the second environment for learning.

The third would be the community itself. This is such an exciting laboratory for learning and here again, in the traditional system, it is not utilized as well or as often as it might be. What we suggest is analyzing the community from the point of view: what is there about this place that makes it a nice place to live? Let's develop a listing of the plusses and then, conversely, those things which are less than desirable about this community. In a democratic society how do we manipulate power in order to effect change? Many of our people are somewhat illiterate about the intricate workings of the democratic process. They realize that there are democrats and there are republicans and then there is a large group of people who cannot make up their minds. We call them independents. And they know that elections take place periodically and we have an obligation to go and vote for someone, but that is about all they know. How sad that more time isn't spent to help our people to learn how to use this political system and how to apply pressure in order to effect change. Much more effort needs to be done in this area.

Solving the problems that exist in the community are not always easy and simple. Take a mining town in the mountains of West Virginia where it was discovered that many of the people over thirty years of age are suffering from emphysema caused by the amount of pollution in the air coming from the mines. What do we do? Do we close the mines? Well, if we do, then ninety percent of the people in the town no longer have employment. What is the answer? It is a heavy question and one that needs a lot of work and thought. Something that we have to learn and appreciate is the fact that when we are talking about a solution to environmental problems we are talking about tradeoffs. There is no free lunch. In order to achieve something, something else has to be sacrificed. It is as simple as that. And yet it is difficult to get this simple idea across to people. The fact is that by not moving and trying, they are endangering their own lives and the lives of their children yet unborn. So, use of the community then should be an integral part of any environmental education program.

The fourth area is the one that is of particular interest to me and I know to Jack: the use of natural areas, because we both operate field centers. However, a question arises: why do we take people to a place

like the Pocono Environmental Education Center or to the School of Conservation or to other numerous field centers that exist across this country? What is the basic reason? Well, very simply, there is one reason and one reason only and that is to help those who participate in programs at centers like this develop an understanding and appreciation of the role that natural areas play as part of a life support system. I am speaking here about the "essence of life," not just physical life, the totality of the living experience.

This leads to the necessity for breaking down this enormous thing we call curriculum into working areas, and we have found that the curriculum conveniently breaks down into four areas: the humanities, social studies, outdoor pursuits, and the natural and physical sciences. Now, in each of the four learning environments, there should be learning experiences planned in these four curriculum areas. This is very important if the bottom line is to be eco-activism. We try to raise the environmental literacy of people so that they will be willing to do something to improve the quality of life where they happen to be at any particular time. Not everyone has the same interests and aptitudes. For some, a setting such as this would be aesthetically enriching or spiritually motivating. So we should have experiences to capitalize on that feeling. Others enjoy studying the evolution of culture in learning how different populations down through the years have utilized natural environments and natural resources for survival. Still others enjoy the recreational aspects of natural areas. As I have said facetiously, if dangling on a rope on the side of a mountain is the thing you enjoy, then you had better be willing to invest sometime to ensure that there will always be mountains left to climb. Then there are some who enjoy learning more about the interaction and the interrelationship of all living and nonliving things; how we are merely part of a giant system and that everything we do will have an effect somewhere else. As one scientist once said, "to pick a flower is to disturb a star." Some find this realization exhilarating and motivating.

Now this organizational structure is one that is understandable. The students have had experiences in the classroom and have, for one reason or another, been on the school grounds. They know a little bit about the community, not much, perhaps, but a little. They have had some kind of an experience at some time in a natural area, because most people find such an experience stimulating and rewarding. So now, we need to take all of the materials that have been developed and we need to break them down and point out where they fit into an existing curriculum and where these experiences might best take place. There are some things that can only be done in a classroom and there are some things that could never be done in a classroom. It is up to us as professionals in the field to try and assist teachers by packaging a curriculum more conveniently, realizing the tremendous pressures under which they operate. Only then will we get environmental education in all of the classrooms and schools of this country. It won't happen until we as professionals recognize our responsibility to teachers, take the materials we have developed, and work more closely with the unsophisticated and uninitiated classroom teachers in trying to develop and organize a structure that has meaning and also has the possibility of implementation.

In order to achieve this, in addition to the great deal of homework we all have to do, it is also necessary to arouse public interest. We are dealing in this country with a very, very apathetic and lethargic citizenry. Why, because we live in a country with approximately six to seven percent of the world's population and annually we use forty-six to fifty percent, depending on how you break it down, of the world's resources. Because of all of this affluence, it is extremely difficult for anyone to believe that things are going to change. The end of the tunnel is in sight unless we change our mode of living, we change our value system, and we recognize our role and responsibility in the world community. Third world countries are very concerned about the fact they are not receiving their share of the world market. Right now, the world gross national product would give about seven percent to the developing countries. They plan to have twenty percent of that market, regardless of what it takes, by the year 2000. Nothing will stop them. This means that things have to be done, concessions have to be made, strategies have to be developed, compromises have to be initiated. And the future, interestingly enough, the future of mankind, depends on the decisions that will be made, to a large extent, in this country--a tremendous burden for all of us who call ourselves American citizens!!

We will be getting a little help to arouse public interest in just a few weeks, for a massive study will be released, entitled, The Global 2000 Study. Perhaps some of you have seen the preliminary report. This study was undertaken by the United States government at the request of President Carter in his 1977 environmental message. It is different from any other study the government has ever undertaken because it has involved a cooperative effort between fifteen governmental agencies. It is being directed by Dr. Jerold O. Barney, formerly of the Rockefeller Fund. He is working out of the Council of Environmental Quality. This study will not prove to be bedtime reading because it is frightening in many respects. Some of the things it will point out is the fact that the world population, regardless of what methods of control are initiated, will increase fifty percent by the year 2000; that forty percent of the world's tropical rain forests have already disappeared; that coastal wetlands supporting two-thirds of the world's fisheries have already been damaged; that nineteen percent of the earth's land surfact is threatened with desertification (the conversion of fertile lands and regions into barrens); and, at the current rate that the world will lose one-third of its crop land before the end of the century. It is said many times that before you can get a person to do something you have to get his attention. If this study doesn't accomplish that, I don't know what will. The interesting thing is that the majority of responsible scientists are in total agreement with the findings of this study. They can find no errors in collection or analysis of data. I recommend that you be on the watch for this study when it is released sometime late in September.

Another project I believe will do much to stimulate interest is the launching of the World Conservation Strategy Project. Under the aegis of UNEP (United Nations Environment Program), the World Wildlife Fund International, and the International Union for the Conservation of Nature

and Natural Resources, this program will be launched with news conferences in all the major cities of the world early next year. It is most impressive to say the least. The strategy will also outline long-term priorities for solving these problems as well as recommend possible solutions adaptable to local, national and regional conditions. The causes as well as the symptons will be analyzed including the development of energy needs for an expanded world population. They will also take into account population pressures, poverty, economic growth, and raw material needs and inappropriate and alternate technologies for the production of energy and basic human needs. This World Conservation Strategy is the product of one of the most thorough international consultative processes ever undertaken in the history of mankind. Over four hundred members of the International Union for the Conservation of Nature and Natural Resources combined with government agencies and non-government organizations from more than one hundred countries, and more than seven hundred individual scientists and other experts, have been working for a period of two years in attempting to get the Strategy ready for launching. This program is intended to be an evolving document--it will be regularly revised to reflect new knowledge and changes in perspective and values, particularly as they relate to the socio-economic needs of mankind and to the sustance of the natural resources on which mankind depends. I recommend very strongly that you watch for the press conference announcing this program, which will be held in New York City early next year. Shortly after that date, the materials will be made available to you. In addition to the basic technical document, a paperback version will be published for popular consumption. I see this project as a fantastic catalyst for all of us who have worked so long to try and reach into the minds and hearts of people and to help them to see what must be done in order to preserve the integrity of life on the planet.

You have spent a few days together exploring new ideas and new strategies, examining magnificent curriculum materials that have been developed. Now I suggest that we join forces regardless of our professional affiliation. Any of us who call ourselves professionals in the field should work to develop those materials so that teachers at all levels of education will see how they can be used. I suggest we take the material from the World Conservation Strategy Project and study it, read it, analyze it, spread it through the memberships of all our organizations because this will serve as a means of reaching into the minds and hearts of people. We, by accident, and some by choice happen to be members of a country that must, by its very nature, play a leadership role in any such effort. The challenge is ours, and I think that all that has been said here in the last few days and all that will be said in the next few weeks and months is perhaps best summarized by the election slogan of the newly formed Ecology Party in England. I would like to share it with you because it says it all, "We have not inherited the earth from our fathers, we have borrowed it from our children."

Thank you.

KEYNOTE ADDRESS: Fragile Islands of Hope

Richard L. Stanton, Regional Director, Mid-Atlantic Region, National Park Service, 143 South Third Street, Philadelphia, PA 19106

Good afternoon distinguished conference members. A special hello to your CEA President, Dick Myshak, Deputy Assistant Interior Secretary for Fish and Wildlife and Parks, and a hello to Jack Padalino, Director of the Pocono Environmental Education Center, who is also an important man in my life. Jack directs, in my opinion, one of the finest educational centers in this country, a center which is now enjoying a sound economic base and offers extraordinary leadership in conservation education today.

I'm sure you have seen, by now, the Padalino "handy-dandy" water filtration system which squirts its way into the pool, chlorinates itself and runs happily through PEEC's pipes and magically turns into vegetable soup or ice cubes for your scotch and soda. Years ago with higher water tables and fewer septic systems, shallow wells did the job. Not so now. Signs of the times. You will be glad to know that funds are available for a completely new water and sewer system. Next year, when you return, which I'm sure you will, you can enjoy a swim with your soup and ice cubes.

You can imagine how proud I am to be with you today for you have chosen, as a background for your conference, The Delaware Water Gap National Recreation Area. As most of you know, as a result of the passage of the National Parks and Recreation Act, approved November 10, 1979, the issue of the Tocks Island Dam was laid to rest, by designating that portion of the Delaware River flowing through the National Recreation Area a component of the Wild and Scenic Rivers Act. Thus, by law, the Tocks Island Dam cannot be built. Some 35,000 acres of land have just been transferred to the National Park Service increasing the park base to 50,000 acres with about 20,000 acres more to go, for a total of 70,000 acres. You will be seeing a national shift in emphasis toward this park. This park has a fantastic potential. Not only will the land base be enormous, but the area will be enhanced by 35 miles of the Delaware River, a clean free-flowing river providing the finest in canoe cruising and camping and swimming. Trails, historic features, horseback riding and environmental education centers in reach of over 30 million Americans within only a 100-mile radius. In addition, the Parks and Recreation Act approved the establishment of the Upper Delaware River component of the Wild and Scenic Rivers Act. The Upper Delaware legislation is unique, providing for a partnership arrangement between the local public bodies, its citizens, park visitors and the National Park Service. The Department of the Interior will provide study funds and other resources to grapple with the burgeoning overuse of the Delaware River and its shores above Port Jervis to Hancock, NY. All this and a new superintendent who reports for duty next week. His work is cut out for him, to be sure.

Let's get back to the Padalino "handy-dandy" water filtration system--a minor park maintenance problem? In a way--nothing irreversible. A new system will clear things up in short order, perhaps--what happened to the PEEC water system seems a small matter, but it is an important bellweather to measure the declining state of our environment. Water tables down and sewage leaching--multiply this one incident by many such systems within a several mile radius of this facility and you will soon agree that the problem has or is about to become regional! Multiply the numbers of similar regions and you begin to contemplate (sometimes with alarm) what the words "land ethic" and "conservation ethic" really mean. When it happens in your back yard those lofty words that provoke high-minded philosophical thoughts become gut words--words that require action now--correction now--planning now. Something must be done now! now! now!

We see parks as "fragile islands of hope" in a mad world which seems to rush, at times, hell-bent for destruction. We are managing our islands of hope with care and diligence and intend to carry out this stewardship. The PEEC water problem, however, leads us to contemplate larger and more ominous degradation. Here are just a few that face our parks today, this moment, this instant:

Everglades - Adjacent land development and drainage continue to impact the park's critical fresh water supply system.

Glacier - Oil and gas development, coal mining, and logging on adjacent lands plus air pollution from an aluminum smelter.

Big Thicket - Oil and gas development, logging, and pesticide/herbicide use.

Chaco Canyon - Proposed energy developments encircle the area.

Capitol Reef - Coal and uranium mining nearby and proposed power plants.

Olympic - Adjacent residential and commercial development and timber sales on private and Forest Service lands.

Indiana Dunes - Wastewater from neighboring industrial operations impact ground water and a nuclear power plant is under construction at the park boundary.

Yellowstone - Proposed leasing of adjacent forest lands for geothermal development in the same geyser region that supplies Old Faithful!!

Cape Cod - Groundwater withdrawals for adjacent residential developments.

Acadia and Zion - Proposed coal-fired power plants within sight of the park.

Bryce Canyon - Proposed open pit strip mine in full view of Yovimpa Point.

These are not isolated cases of possible or marginal threats to the parks of the System. A recent survey of present adverse impacts on our parks by the National Parks and Conservation Association reported that two-thirds of the Superintendents surveyed indicated that a present or probable incompatible land use adjacent to their park boundary threatened park resources.

This NPCA survey was presented in an article titled "No Park Is An Island," March 1979. That is an apt subtitle for my remarks to you today. Of 225 responding Superintendents, 73 reported residential developments, 43 industrial developments and 37 road developments that they determined do or could threaten the integrity of that park's resources or the quality of the visitor experience. Grazing, logging, energy extraction and production, mining, and dredging were also reported by the Park Service field staff to the NPCA. I recognize if parks were ever islands in the sense that we as managers could close our eyes to activities outside the boundary, that day has long since ended, my good friends.

In the Mid-Atlantic Region we have set up an early warning system to monitor possible threats to the parks. Only last week I learned that there is great interest in developing an industrial site on the linear piece of waterfront property just a stone's throw from the famed Appomattox Manor at City Point in Hopewell, Va., where General Grant staged the Union troops and accumulated massive supplies to move south and conclude the Civil War. This waterfront property is the very site of the river landings of supplies and soldiers. The closing chapter of the Civil War cannot be interpreted with any degree of integrity without that site. But we are safe here. The Parks and Recreation Act gave us authority to acquire not only Appomattox Manor but the critical waterfront site as well--a happy ending to this story.

But there are some not-so-happy endings in my region. Intensive planned subdivision development on the high vistas overlooking Valley Forge, for example. We have a legislative proposal working its way to the Congress now and we may have this one under safe control. We're not sure there, you might say. Well, if all it takes is buying up land to mitigate threats to parks, get on with it and stop fretting. Well, my friends, I fret because times are changing. In the halcyon days of 1916 (the year the National Park Service was established), most national parks and monuments were simply carved from lands already owned by the United States, most of it vast, empty expanses to the west. Acquiring lands for parks was no problem--no irate landowners, no skyrocketing land costs. Parks could be established by simple proclamation.

No, we cannot solve threats to our parks or establish new areas or add to existing areas by the "magic wand" of buying every piece of land in sight. Times have changed. The public will not tolerate poorly thought out land grabs. The political realities of life today preclude brutal massive outright land acquisition as the only way to save parks for future generations. Thank goodness for that!

We step sideways then and examine other land acquisition tools: the leaseback, the less than fee interest, the reserved right of use for life or 25 years, the scenic easement.

Right now, in this park, we are completing a land acquisition plan and using, with heavy public involvement as our guideline, our new land acquisition policy which has been publicly scrutinized and agreed to. The policy guidelines are good and will do the job. Parks can be well protected with a different acquisition approach. Good faith can be maintained with the public. It's all in how you go about it! For the past 14 years, the Tocks Island area resembled a battle zone. When you build dams you cannot provide for life tenures or scenic easements. You must acquire everything. The vacuum cleaner approach, I call it. As a result, families were disrupted, historic farms abandoned, and a whole way of life here in the Minisink Valley has just about disappeared. The Corps of Engineers, of course, had its job to do. Fortunately, as part of its job, it acquired some lands around the perimeters of the proposed dam, for park purposes. This center is located on just such land. Former landowners and present landowners in this area have had too much of Government. They want to be left alone. I can understand this. Land acquisition for public purposes is an adversary process at best and when land is acquired, particularly by condemnation, and the public use for which the land was acquired changes in midstream (as in the case of the Tocks Island project), the public gets dizzy. Recently, at a public meeting in Belvidere, N.J., a woman told me..."My husband and I would not think as harshly over the taking of our property if they had just gone ahead and built the dam. At least it would have made some sense.." As a result of this public attitude, our program here is a soft program. We have over 6 million dollars to spend on land acquisition here. We are proceeding with hardship cases; completing Corps of Engineers condemnations; and dealing with others who want to sell. We have made public statements that if an owner does not wish to sell and the property is not needed for park purposes now or to protect the park, we will "skip" over that owner and come back another day. Well, you wouldn't believe it, but as a result of this approach, landowners are contacting our land acquisition agents here in the park in greater numbers. At the rate we are going we will be acquiring much more land that we had planned to this fiscal year. The 6 million will go fast. We are acquiring a significant number of properties on the proposition that owners maintain the status quo and occupy the properties for 25 years or life. We are also starting to move into a scenic easement acquisition program, but slowly.

I say slowly because the public has difficulty in understanding what a reserved life estate is and what a scenic easement is—I mean real trouble. A massive educational process will begin soon. The general public is not sophisticated when it comes to understanding estates in land. When we buy our dream house we seldom realize that all we are buying is, essentially, the right to use, under certain restrictions which we all know about but rarely think of. Your residential lot, therefore, can be used for residential purposes—subject to police powers (regulation, etc.), zoning, taxation, escheat to the

state, interests of others (utility lines, rights of way). Frequently we contract to buy a house and half-acre lot only to find when the title is run, that the neighbor has a right to use 12 feet on the east side for a driveway or the utility company may maintain a power line across the back of the property or the property cannot be subdivided in lots less than half acre and the covenants that run against the land (which are enforceable unless changed by a majority of the landowners by petition to the court), do not allow you to build that garage you wanted to put in. It is said that we own the "fee simple" estate but in reality we own the fee simple estate subject to many other rights of use by others and restrictions. Scenic easements are the hardest estate in land to understand for the uninitiated.

Stated simply, a scenic easement (or restrictive easement) is a conveyance of a portion of your real estate rights (usually to a public body) which is essentially a contract between you and the public body to refrain from doing certain things. You, for example, agree to maintain the status quo and not build in a manner to degrade the property or to enjoy the benefits of any future upzoning which would change the use and character of the land. For this conveyance (or contract), you receive cash or a tax deduction or do it out of the goodness of your heart. The recipient of the easement holds it forever, can assign it, sell it or give it away. The recipient has no right to enter on the property but can take you to court if you violate any of the contract agreements in the easement document. If you violate any of the agreements the court will decide on the penalty or restitution. In some states it is the planting in kind of trees that are cut down. In other states, case damages accrue. The price of a scenic easement is in direct proportion to the restrictions placed on the property.

Scenic easements were first used in the 1930's on the Blue Ridge and Natchez Trace Parkways. Sale price went about $5 an acre. Usually, as in that day, scenic easements are sold or donated in the hope that the acquiring agency would be satisfied and leave the landowner alone. Believe it or not, this is usually the case. A lot of land needed for buffer or scenic qualities need not be purchased outright (fee simple). Today, we use a standard easement but will modify it to suit an unusual situation.

We will be using different land acquisition tools in greater measure as time goes on. Make no mistake about it, however, if parklands are threatened we will not hesitate to condemn where necessary. So, you see that our soft approach today also includes a gentle warning to those who would try to tamper with prices by subdividing or otherwise destroying the land that God has given us. Land is precious; they're not making it any more.

In closing, I would like to appeal to the membership of the Conservation Education Association and to other public-spirited enlightened groups. Promote the teaching of the techniques of resource protection through the use of the full range of land acquisition tools which are available. We don't always have to buy the land outright! The money is more wisely used, the public ceases to be the adversary and the land is well protected. We are reminded periodically and forcefully that each successive resource manager is but a passing steward of the land. It is our responsibility today—the responsibility, ultimately, of future generations of responsible managers. There is no greater challenge, nor will there by any sweeter success than protecting our nation's vast resources. It is not too late.

CONCURRENT SESSIONS

The following summaries are listed alphabetically according to the presentors' surnames. Please consult the Table of Contents if you wish to locate a specific topic. Readers are invited to correspond directly with the presentor(s) for further information.

BARBARA ARMSTRONG, Member, International Playground Association, c/o 18 Sheridan Ave., West Orange, NJ 07052

A Community Approach to Creative Learning Environments

Children require environments that foster creative growth and stimulate inquiry. How can the community effectively provide spaces that encourage children to grow and learn when it has limited resources available? A growing number of people all over the world are concerned with environments for children.

The International Playground Association (I.P.A.), established in 1961, works to bring attention to issues dealing with children and the environments in which they live. In 1979, the International Year of the Child, I.P.A. is acting with the United Nations as a non-governmental organization to promote the Rights of the Child. (Artwork depicting these rights was exhibited around the Pocono Environmental Center main building during the conference.) I.P.A. does not restrict itself to playgrounds, as the name may imply, but deals with environments in schools, hospitals, and many other areas where children are affected.

The presentor shared some of the information that is available through I.P.A. and many other organizations with the same concerns. By examining playgrounds specifically, the presentor encouraged participants to examine their own environmental awareness for children and to become aware of the importance of play in childhood development. Play should not be taken lightly and this principle must be considered when designing and building an environment for play.

The play movement currently taking hold in the United States is a varied mixture of people and ideologies. It is important to understand the different types of play areas currently under our consideration: the typical playground, the architects playground, the creative playground, and the adventure playground.

The typical playground often uses pre-cast metal swings and slides, and may or may not include such important items as safe surfacing. It only takes one look at an injured child to evaluate the needs for regulations in this area.

The architect's playground is another type of play space that is becoming a popular, efficient, and an optically pleasing environment for wealthy or well-funded communities. These playgrounds often are built with many well-thought out and safety-oriented designs. Their major drawback is often the lack of user-oriented planning and the burdensome maintenance of structures after initial funding is depleted. Many projects of this kind are found in New York's Central Park, and in other parts of the country.

The "creative" playground falls into many categories in both the community-built playspace and the "designer" space. The basic creative playground is one that uses recycled materials to implement play structures. A creative playground here at P.E.E.C. was the result of a project planned and carried out in the summer of 1978 by the presentors with the Youth Conservation Corps and much hard work. The result is an addition to P.E.E.C. which stimulates inquiry from many visiting groups. The P.E.E.C. creative playground was investigated and discussed during the presentation.

One of the most interesting ideas that the International Playground Association is promoting is the unique adventure playground. Adventure playgrounds originated in Denmark in 1943 and since then have spread world wide. They are, in simple terms, spaces that children create for themselves. There are several components of adventure playgrounds that are unique. For example, in Denmark children are given a space, building materials, and full-size tools to build themselves an environment. Children, under the supervision of a full time play leader, are able to imitate the adult world to the maximum. Fire is another tool about which they learn. Fires range from communal cooking areas to small candles in the children's created dwellings. Pets are often part of an adventure playground, giving urbanized and/or "apartment-ized" children opportunities to experience the life-death cycle and work responsibily to care for their animal.

The adventure playground was developed as the answer to an industrialized world that limits children's exposure and experiences. Adventure playgrounds are not an easy concept to promote in the insurance-conscious, over-protective world in which we live today, however they are valid and should be investigated. Several adventure playgrounds exist in the United States and Canada today, but the concept is in a slow process of acceptance.

The community approach to creative learning environments can begin with involvement in creative playground building. Several people across the country work as consultants with community groups to organize, plan and carry out play projects. One of the major factors in community planned activities is establishing an organizational base from which community resources flow.

It is with the imagination of a child and the background of information concerning children's needs, that a play space can be successfully planned and implemented. The ideas of children are often an excellent

basis for playground design. The possibility of thinking as a child is the problem we are left to solve in creating learning environments.

HARRY F. BETROS, 280 Brighton St., Staten Island, NY 10307

Using the Field or Vacant Lot as a Learning Laboratory

This workshop gave participants an opportunity to explore a nearby field as laboratory to experience and learn about the abiotic as well as the biotic factors which create, maintain and even change that ecosystem. Some of the ecological concepts pertaining to the forces and phenomena which determine and govern how the ecosystem functions were considered, including the influence of man.

Techniques and procedures learned here can be applied to exploring and experiencing the same ecological concepts in other ecosystems. Particular emphasis was given to the similarities between the field ecosystem and the vacant lot of the inner-city, within easy reach of all schools. The workshop also addressed itself to the ways these experiences can be used to enrich other curriculum areas and the ways other disciplines can be used to understand the environment more effectively.

Suggestions and ideas of ways to extend these initial experiences were also provided.

JOHN H. BITZER, District Forester, Pa. Dept. of Environmental Resources, Bureau of Forestry, 474 Clearview Lane, P. O. Box 150, Stroudsburg, PA 18360

Forest Uses in Conflict

This session presented an overview of the increasing demand for the use of our forest resources and the inevitable conflicts between these uses and we users.

The traditional resources of timber, hunting, fishing, and quiet solitude have been joined by many new forest recreation activities and an even greater demand for wood products. Snowmobiling is not compatible with winter bird watching. Horseback riders don't want to have their trail ride disrupted by dirt bikes. Removing dead wood from the forest for firewood may interfere with nature's processes of decay and soil building. And there are so many more legitimate concerns.

This presentation included a discussion of strategies that might be applied to our use of the forest resource so as to minimize the conflicts and maximize the benefits. Hints on how educators can make good use of their friendly neighborhood forester were also offered.

MARY LYNNE BOWMAN, Associate Professor, Div. of Environmental Education and Research Associate ERIC/SMEAC, The Ohio State Univ., 124 W. 17th Ave., Columbus, OH 43210

The Potential for Environmental Teaching/Interpretation in the Urban Setting

Traditional and undergraduate curricula in interpretation and environmental education overlook the potential of the urban setting in providing field experiences for students. The diversity inherently contained within the city offers countless opportunities both in working with people of a variety of backgrounds and ages and testing manifold programs.

The Ohio State University began utilizing the urban community as a training ground as a result of feedback from alumni that indicated a lack of people-oriented content in the curriculum. Specifically, it was pointed out that although the program was quite apt in the training of interpreters and environmental educators in natural resource matters, it was less effective in preparing the students to adapt to meeting the needs of the types of clientele they would be likely to encounter in their chosen professions.

The basic interpretive and environmental education methods courses provided peer group interpretive and teaching experiences but the challenge of working with different age groups from different socio-cultural backgrounds was lacking. Internships provided practical field experience but student participation was usually limited to conducting established programs. They offered little chance for student creativity and the testing of programmatic ideas and methodologies in varied settings.

Clearly the students needed more experience working with special groups and greater exposure to a variety of program possibilities. The urban community had the necessary ingredients--both people and diversity--to provide these types of experiences. Thus, Natural Resources Interpretation/Environmental Education Program Development in the Urban Setting, an undergraduate field course, was developed and implemented into the curriculum.

Course content includes: an investigation of the urban dwellers' perception of their environment; exploration and critique of the potential of the interpreter and environmental educator in the urban setting; review of techniques of enlisting community support for natural resource or environmentally oriented programs and projects; design and implementation of a program or project with members of the urban setting.

Soliciting ideas for projects has proven to be no problem. A major source is the city newspapers. Almost daily, there is an article, editorial or letter to the editor that suggests possibilities for student involvement. The county social service department has been another valuable resource for potential projects. Previous class endeavors resulted in additional program requests. The following are descriptions of student projects:

1. Development of a Mini-Park on a Vacant Lot

A Local Head-Start Center expressed concern of the lack of a play area in the community for their preschool children. The nearest park to the center was located seven blocks away and all routes to it were through highly congested traffic areas. There were two vacant lots owned by the school that leased the Head Start Center in the immediate vicinity but they were overgrown with weeds and being used primarily as a dumping ground by the community. Students contacted the lot owners and gained permission to develop either or both into some type of recreational area. Along with staff and Head Start's parents, students then canvassed the neighborhood soliciting financial assistance and/or work pledges. They raised $900 including a gift from the Metropolitan Action Center and pledged several work volunteers. Mini-park plans were developed with parents, staff and neighboring residents and all set to work to clean up the lot, build a rail fence, plant evergreens, build patios and benches, construct a sand box, dig a garden for pre-schoolers to plant and care for and develop a land lab for educational purposes. The money was used for playground equipment. Opening day at the mini-park was a real source of pride and accomplishment for both students and residents.

2. Organization of Community Action Groups

A variety of projects have resulted in helping various communities throughout the city organize groups and programs to attack specific local environmental concerns. Included among them are:

Rat Control -	Conducted door-to-door education program on ways to eliminate rats from the area. Obtained rat poison and new garbage cans and lids from city civic group.
Lead Paint -	Formed coalition to require absentee landlords to rid housing of all lead paints.
Drainage -	Helped community organize and present "Number 1 problem priority" of poor drainage on city streets to City Council.
Housing Restoration -	Helped urban renewal project collect historical data to assist residents in authentically restoring their homes.
Litter Clean Up -	Organized "Project Pride" in two city neighborhoods and worked with residents on clean-up days.
Community Gardening -	Organized two neighborhood cooperative garden plots and assisted the users in understanding and enjoying recreational gardening.

3. Senior Citizen Centers and Convalescent Centers

These centers provide a gold mine of possibilities. Residents are eager for contact with youth and the outside world; thus, they make excellent audiences and testing grounds for programmatic ideas. Sing alongs, hoe-downs, walking tours of the city, fishing trips, roof top flower and

vegetable gardening, herb gardening, nature crafts, slide presentations, visiting and interpreting architecture of local churches and other interesting city buildings, collecting and preparing edible wild foods and spring wildflower walks are among the activities students have conducted with the senior citizen groups.

4. Working with Handicapped

Handicapped groups provide excellent opportunities for students to adapt programs to fit the needs for special populations. Students have planned and conducted sensory walks and programs for both blind and deaf groups. Recreational programs for the handicapped are also welcome. One program organized for college students confined to wheel chairs, taught dendrology using the campus as a laboratory! Wheelie Nature Club was born out of that program and continues on the Ohio State campus.

5. Public School Presentations

Through contact with the local Audubon Society, a variety of natural history presentations have been arranged with city school classes ranging from kindergarten to senior high school age groups. Alumni report these experiences extremely valuable since both interpreters and environmental educators find a great portion of their work involves school groups.

Students report that exposure to diverse special use groups contained in the urban community has increased their awareness that the success of their programs greatly depends on their sensitivity to the needs and values of specific clientele they serve. Actual practice in front of a variety of audiences has also proven to be a real boost to their self-confidence. Evaluations from both students and urban groups disclosed feelings of satisfaction and pride in their efforts--particularly the successes of opening communications between groups that had not previously been able to identify with each other.

Reference materials and suggested readings to help prepare students for various urban experiences include:

Barkin, Josh. "Let's Go on a Gutter Walk in the City, or In the Gutter with Barkin," The Interpreter, Vol. 9 #4, Winter 1977-78.

Bowman, Mary Lynne and Coon, Herbert L., Environmental Education in the Urban Setting: Rationale and Teaching Activities, ERIC Center for Science, Mathematics and Environmental Education, 1200 Chambers Road, Columbus, Ohio, 1976.

Bowman, Mary Lynne and Coon, Herbert L., Recycling: Activities for the Classroom, ERIC Center for Science, Mathematics and Environmental Education, 1200 Chambers Road, Columbus, Ohio, 1978.

Children, Nature, and the Urban Environment; Proceedings of a Symposium Fair. USDA Forest Service General Technical Report NE-30, 1977.

Coon, Herbert L. and Bowman, Mary Lynne, Energy Activities for the Classroom Vol. II, ERIC Center for Science Mathematics, and Environmental Education, 1200 Chambers Road, Columbus, Ohio, 1978.

JAMES BRETT, Hawk Mountain Sanctuary Assn., Rt. 2, Kempton, PA 19529

A Mountain Experience

The Hawk Mountain experience is multi-faceted. Its cultural history, prior to the Sanctuary's existence, is extremely rich. Its natural history is a blend of widely diverse floral and faunal types indicative of a northeastern deciduous forest. The philosophy of the Sanctuary weaves culture and nature into a workable environmental ethic which is passed on in many ways to our students and members of the Sanctuary and to the thousands of visitors who come each year.

Through the use of multi-projection and commentary, the essence of Hawk Mountain Sanctuary was presented. Through the use of live hawks, the concept of predator ecology was stressed. Both presentations conveyed "A Mountain Experience".

MARGARET BROCK, 1117 S.R. 124, Rt. 6, Hillsboro, OH 45133

Doings in Ohio

Through the medium of a slide presentation, the presentor depicted how she has used and is still using her personal interest in Conservation Education in formal teaching as well as in her work with organizations. Now retired from teaching, she is still the County Coordinator for the Highland County Soil Conservation Service, the first to be organized in Ohio. She has organized and conducted in-service conservation workshops, tours and field trips for the teachers of Highland County. Since the Ohio State Dept. of Education has mandated the teaching of Conservation Concepts K-12 statewide, the presentor outlined her plans for more detailed teacher training programs to be conducted in the spring of 1980 to meet this need.

The slide presentation also included descriptions of some conservation programs currently operating in Highland County Schools. A discussion period followed the formal presentation.

J. E. CARROLL, Forest Service, U.S.D.A., P.O. Box 2417, Washington, DC 20013

Investigating Environmental Issues in the Home

Each day, in our homes, we come in contact with many issues that affect our environment but that are hidden from us simply because they are so visible that we tend to look "through" them rather than at them.

In this session, participants had the opportunity to open one of three doors-to the closet, to the pantry and to the toy box-and investigate the contents of each based on the resource origins of each item, the environmental impact of its manufacture, the useful life of the item, and

the impact of its disposal. This activity centered on three basic assumptions:

1. The United States has generally become the "best dressed" country in the world primarily because of our creativity, our resource wealth and our willingness to pay well for what we wear.

2. The tastes of the people in the United States in terms of food could be classified as both faddist and fattest. We base many of our food decisions on impulse rather than an understanding of nutrition.

3. In our affluent society we spend a great deal on toys for both children and adults without thinking about origins, quality and environmental impact.

Participants chose one of three doors to investigate and received simple activity plans for the other two areas.

GARY E. CHRISTENSON, 3 Pugsley Pl., Ossining, NY 10562

Working with Special Education Students in the Out-of-Doors: Walden-in-the-Woods

Walden-in-the-Woods is a fulltime outdoor education program for learning disability students--an unusual alternative program sponsored and supported by BOCES and located in the Putnam/Northern Westchester area at the Madden Outdoor Education Center in Kent, New York. This day-use nature preserve has recently become a complete outdoor education center with many trails, a challenge course, and a wide variety of units of study, such as forest ecology, geology, pond life, and cemetary activities, serving member districts interested in outdoor experiences.

The Walden-in-the-Woods program had its origins about five years ago. It was a natural outgrowth of a project-oriented class for those students who could not relate to their regular academic program. Their frustration resulted in failure, acting out behavior, and a strong dislike for school. All of this added negatively to their already poor self-concepts.

The program serves boys, ages 11-15. There is a wide divergence in academic achievement, social-emotional maturity, intellectual development, and the severity of emotional and neurological disorders. All of the students are designated as having learning disabilities. Some have experienced severe early deprivation and rejection and are living in residential settings. Others are very bright, having minimal learning disabilities, but have been serious behavior problems in the local schools. There are a few other students who have been placed in the class because the program was flexible enough to contain them. These students are extremely limited and may be served in a type of sheltered workshop program. These students are hyperactive, distractable, and have serious perceptual difficulty. The I.Q. range is from 45-94, the math range from K-4, and the work recognition range from K-6.5.

The question arises whether all students can benefit from this type of program. Within the wide divergence of abilities, there are a few students who do poorly and need to be placed back into the main building and a more formal school day. Personal observations show that students who need support services, such as speech therapy, reading specialists, psychological and counseling services, and other support areas should not be included in this outdoor program since they would not receive these services. In general, if the student likes the outdoors enough to want to be in the program, however, he usually can be served.

We are trying to provide a highly successful reality oriented experience for one school year so that we can place the students in better alternative programs the following year. These programs include mainstreaming to the local school building, more academic programs at our regional facility, and vocational programs. For those students who have to remain on our team for an additional year, we hope that they will be better able to handle themselves than before. Our statistics up to this year show that out of a total of 55 children, seven were dropped from the program and placed on campus.

The program is based on the seasons and weather conditions. In the fall, we study hibernation and migration and how the fall is a time for everything to prepare for winter. Such academic questions as how do leaves change color and how do leaves fall are investigated. We set up large tanks and create environments for frogs, turtles, salamanders, crayfish, water insects, and snakes. The students love to catch these creatures and observe them for a few days. They learn their habits, food they eat, homes they live in, and how to care for them. Some students can identify by name the different species, whether male or female, or young or mature. Most important, however, is the values the students develop in respecting life and the place everything has in nature.

Another fall activity is working with wood. We teach the students how to saw and split logs. Many prevocational skills are developed as the students use saws, axes, sledges, and wedges. They learn safety, maintenance, and proper use of the tools. These skills and activities are on-going ones throughout the year as we use the wood for fireplaces, for our colonial fire during maple season, and for repair and construction of trails, campsite, fire circles, and other primitive outdoor construction. These basic cutting skills are then transferred to the harder tasks of cutting down trees that are dead or approved by the state forester for thinning and preserving our sugar bush. Deciding which direction to fell the tree by taking into account the shape, balance, and other such conditions is quite an experience.

Many things are learned besides acquiring the skills to cut wood. Counting tree rings, noticing the color of wood or the smell, looking at insect homes, and finding barbed wire are all learning situations of which to take advantage. And we cannot forget the value of releasing aggression or hostility in a constructive way and proving that one is a man in a way other than fighting or competing in sports.

During the late fall and winter, activities include animal tracking, ice fishing, ice safety and rescue, first aid, snowshoeing, a bird feeding program, and maple sugaring, the main part of our program, and perhaps the most important aspect of it in terms of social development and self-concept.

Together, the students and staff run a small commercial maple sugar plant. However, it is a large enterprise as far as southern New York goes. In fact, it is the largest for the geographic area. We put in about 800 to 1,000 taps and have an oil-fired evaporator. We use bags, buckets, and the modern plastic tubing system. The project spans about two to two and a half months. This includes the training of students as guides and having them learn all aspects of maple sugaring, including tracing its history from Indian and colonial days to modern times. It includes the actual tapping of trees by the students using hand drills and a modern power drill. It includes learning a slide-show presentation which they give to visiting groups. In short, the students are included in all aspects of the program from the setting up through the taking down and cleaning of the equipment.

Some students are involved more heavily in certain aspects as they have the abilities and skills required, but all students take part to some extent in all phases. Building and maintaining the colonial fire and selling syrup to the visiting groups are very popular activities. A student may not be able to add prices and make change, yet, with the help of a capable student, a visiting teacher, or another person, he can stand in front of a group of 30-60 people who are aware of his problems and overcome some of his handicaps. What self-confidence and courage in the admission of a learning disability!

We have about 2,000 public school visitors throughout the seasons. Our guides do almost all of the tours. They start with a slide show presentation. The visiting group of 60 children is divided into two groups, with one group walking a nature trail, while the other group tours the maple sugaring operation. Visitors are shown the colonial fire, the tubing system, buckets, and a demonstration of how to tap a tree. They are then taken into the sugar house and shown the evaporator and given explanations on boiling, finishing, and canning.

Sugaring brings us into early April. We round out the year studying the coming of spring as we observe the accelerating growth of plants. Again we catch our animal friends, but this time we also collect frog, toad, and salamander eggs. A major aspect of our spring activity is our hiking program. The boys take a series of day hikes which add up to about 25 miles on the Appalachian Trail. They receive the Appalachian Trail patch as a reward for hiking appropriately and also for trail maintenance on and near our property. Another "reward" is seeing deer, beaver, snapping turtles, and copperhead snakes on the trail, not to mention the old mines, foundations, and beautiful views.

The daily class schedule is a mixture of outdoor learning activities and a program with regular studies. The students use regular reading and math workbooks and materials. We try tc use them at least three times a week, but much depends upon the weather and the types of outdoor activities that are going on. We do maintain a balance, however.

It is important to mention that one of the goals of the program is to provide constructive leisure time activities for these children not only today, but for their adult life, as they are people who, because of their handicaps, will find it hard to get and hold a full time job. For some, such a job is beyond their ability, and they will need to know ways to spend time constructively.

Our future plans call for us to make use of all of the facilities on the property and to use our students, wherever possible, to guide and teach visiting classes. Our maple operation is expanding to make it more efficient and economical. We are also planning to set up a complete maple facility that would include our Indian sugar camp and a colonial sugar house.

Our outdoor program meets the special needs of most of our students more fully than do the existing school programs in the district for middle and junior high school age learning disability students and, therefore, may be a viable alternative for others to consider. But its success is due, for the most part, to the motivation and interest of the students, themselves, who have taken part in the Walden-in-the-Woods program from its very beginning.

NANCY CHRISTIE, Project SITE, Chester County Intermediate Unit #24, Educational Service Center, 1530 E. Lincoln Hwy., Coatesville, PA 19320

Environmental Education on the School Site

The school site and nearby areas within walking distance of the school offer numerous possibilities for an interdisciplinary approach to environmental education. Not only science, but topics in math, social studies, language arts, and other areas of the curriculum can be enriched by using the learning resources right on the school grounds.

Part of this session involved a description, using slides, of Project SITE (Students Investigating the Environment), a 3-year federally funded program in environmental education sponsored by the Chester County Intermediate Unit #24. The goal of SITE is to make environmental education an integral part of the ongoing school curriculum so that all students will obtain the knowledge, attitudes and skills necessary for making wise decisions regarding the environment.

Moving outside, participants became involved in doing several "hands-on" activities from different areas of the curriculum and involving various grade levels. Teaching techniques and pre and follow-up activity ideas completed the session.

PETER A. COLANGELO and ELISA CARAVAGLIA, U.S. Army Corps of Engineers, Federal Bldg., 1000 Liberty Ave., Pittsburgh, PA 15222

Environmental Awareness Programs

Environmental Awareness Programs are an integral part of instigating sound resource management practices on public lands.

The U.S. Army Corps of Engineers, Pittsburgh District, has developed Environmental Awareness Programs designed to enhance visitors' experiences while introducing basic ecological principles to prevent practices that damage the resource.

Participants in this session were introduced to such Environmental Awareness Programs as:

1. ECO-MEETS - A program developed to stimulate interest in the environment in school age children.
2. ENVIRONMENTAL AWARENESS YOUTH CAMP - A one-week long summer camp for 14 and 15 year olds, focusing on conservation.
3. ENVIRONMENTAL AWARENESS DAYS - A one-day series of mini-courses designed for school and other groups. Have you ever participated in a sun ceremony?
4. ENVIRONMENTAL AWARENESS - Adult workshops--Corps personnel will share interpreture techniques.
5. WATER SAFETY AWARENESS PROGRAMS - Freddy the Fish says, "Don't Drown, it will spoil your day".
6. ENVIRONMENTAL LEARNING CENTER - We have the facilities and expertise to aid you in preparing your own Environmental Awareness Programs.

RICHARD E. DAVIS, President-elect, PAEE, 130 Woodbine Drive, Hershey, PA 17033

Pennsylvania Alliance for Environmental Education: Past - Present - Future

The last ten years have shown a moderate to good increase in the number and types of efforts being put forth to develop and advance environmental education in The Commonwealth of Pennsylvania. During this period of time, many organizations such as schools, governmental agencies, business and industry, service groups, and private clubs developed environmental education materials, programs, courses, centers and the like. This type of development was needed and many of the fine programs and excellent materials were serving the needs of the people. Mrs. Elanor Bennett and Mr. Robert Schwillie, Senior Advisors in The Bureau of Curriculum Services, Pennsylvania Department of Education, have been innovative catalysts in this effort toward developing environmental education in Pennsylvania. The limited staff at the Department of Education was doing a yeoman's job of attempting to wrestle with the mounting demands

of constituents and the virtual flood of new materials and programs, in addition to the projects and programs being developed within the department.

It was at this time that Bob Schwillie, Craig Chase, Doris Parkman, Lou Ritrovato, and several other leaders in the environmental education field saw a need for some type of vehicle that would serve as a clearinghouse and a focal point for environmental education people to rally around. In early 1977, this group met at Slippery Rock State College to discuss the needs of environmental education people and search for a way to meet these needs. After several strategy meetings at Slippery Rock, the idea of an Alliance to serve the needs of environmental education people was born.

By January of 1978, this small group of concerned, dedicated people had grown to one hundred plus. A meeting was scheduled and held at Shippensburg State College in March of 1978 and the Pennsylvania Alliance for Environmental Education was unofficially organized. After a full day of task group meetings, a Steering Committee was elected by the body and given guidelines to legally and officially incorporate the Alliance. Under the capable leadership of Lou Ritrovato and Doug Blazey, the Steering Committee began their task. At this same meeting, it was decided that an attempt should be made to hold a State Conference in the fall.

Placed in the hands of three outstanding people - Doris Parkman, Craig Chase, and Dick James, the Alliance, in concert with the Nature Study Society, held a three-day fall conference at the Schuykill Valley Nature Center in Philadelphia. During this conference, the Alliance was officially brought into existence and the Steering Committee turned over the reins of leadership to the new duly elected Board of Directors.

PAEE provides an opportunity to share knowledge, concerns, and "feelings" about our Pennsylvania environment through:

1. Serving as a clearinghouse for dissemination of environmental education materials and information via newsletters, special bulletins, regional workshops, and conferences.
2. Assisting in developing, implementing and evaluating environmental education programs throughout the Commonwealth.
3. Sponsoring an annual fall conference.
4. Active legislative involvement relative to environmental education.

THOMAS DOLAN, Member, Citizens Advisory Council, Pa. Dept. of Environmental Resources, 721 Glengarry Rd., Philadelphia, PA 19118

Parks and People Require Commitment

In the face of spiraling costs and energy related problems, existing

policies pertaining to Pennsylvania state park land acquisition, operation and maintenance require updating. These policies must reflect current and projected use trends and constraints. Input and cooperation should be solicited from the public in the development of master plans and the updating of management plans. Innovative modifications in park management and operations, including the use of volunteers and new approaches to the economics of park management, can significantly reduce operating costs, will permit the addition of services at minimal cost, and will enable the park system to become more cost-effective in terms of benefits per dollar spent.

CLIFFORD E. EMANUELSON, Director, Devil's Den Preserve, Box 1162, Weston, CT 06883; MS. TAMRA PETERS, National Office, Nature Conservancy

Land for Learning: The Nature Conservancy - Land Conservation Through Private Action

The Nature Conservancy is a publicly supported national conservation group whose resources are devoted to the preservation of ecological diversity through protection of natural areas and the wildlife they shelter. Since its inception in 1951, the Conservancy and its 61,000 members have been responsible for preserving over 1.4 million acres in 49 states. Nationally, some 650 preserves are maintained by the organization and managed by volunteers. In addition, the organization is cooperating with 17 states and the Tennessee Valley Authority in developing natural area inventories to determine which animal and plant species are rare and unprotected within the states.

In the 1950's and '60's, the Conservancy concentrated on land acquisition in order to be sure the unique and significant ecological areas remaining were protected.

During the late 1960's and '70's several "model preserves" were designated. A "model preserve" is an area which exemplifies the finest Conservancy projects. It is an ecologically significant area often protecting rare or endangered plants and animals, a rare ecosystem, or an outstanding natural feature. The land is unique in its natural qualities, relatively free from human impact, and viable as a preserve. Remaining in Conservancy ownership, a model serves as an outdoor laboratory for research and education and often becomes a center for various forms of compatible public use.

One of these models - Devil's Den in Weston and Redding, Conn., is comprised of large inland marshes and huge upland ledges. The Lucius Pond Ordway Preserve, known locally for over 200 years as Devil's Den, contains most of the watershed of the West Branch of the Saugatuck River. The 1532 acres of the Den also include the watersheds of the Perry, Godfrey, Sapbrook, and Ambler Brooks.

Devil's Den offers a variety of research, education, and recreation programs. Students from nearby Fairfield University and other colleges have studied the soils, geology, diverse wildlife, and vegetation of the Preserve. Research papers have been published on geology, soil, vegetation, wildlife, and archaeological investigations.

Self-guiding field study guides have been published on Trees and Shrubs, Spring Wildflowers, Summer and Fall Flowering Plants, and Ferns and Fern Allies based upon the vegetational studies. Teacher and volunteer field workshops have stimulated increasing use of the Preserve as a living laboratory.

Twenty miles of trails meander through dense forests of chestnut, oak, maple, and beech past rushing brooks, marshes, and Godfrey Pond--which has been in existence since the American Revolution.

The archaeological shelters proved to have been in use 5,000 years ago. Rugged Ambler Gorge and Vista present the natural environment at its best. Deer Knoll and Great Ledge provide vistas extending to Long Island twelve miles away with little or no evidence of man's handiwork.

The Student Stewardship Program is a unique service and educational program which links students from high schools or colleges with the protection, preservation, and understanding of a nature preserve. It was designed by the Institute For Environmental Education and used by schools in Ohio. Based upon its success, the Conservancy is offering the program to schools across the country. Activities planned around the school year calendar provide flexibility so teachers can select those activities which pertain to a particular study site and are appropriate to the student's instinct and ability. Both the Student Workbook and Teacher's Manual with a descriptive program kit are available.

This presentation was augmented with slides and specific details regarding present and future use of The Nature Conservancy's Preserves as land for learning for generations to come.

EUGENE EZERSKY, Cooperative Extension-New York State, N.Y. City Programs, Suite 1007, 11 Park Pl., N.Y., NY 10007

A View From the Top

This session dissected the City of New York and its surrounding environs for environmental education experiences (opportunities) as uncovered by standing atop the World Trade Center in New York City. A slide presentation was used to explore the many opportunities which are available in virtually every city to bring meaningful lessons about urban environmental problems to city students.

KENNETH E. FRAZIER, Coordinator, Project ECO, Ames Community School, Ames, IA 50010

Conservation Education for the Elementary Student

The State Department of Public Instruction guidelines for the State of Iowa call for the schools to present organized study to develop an understanding and appreciation of one's natural heritage and responsibilities. Consideration is given to development, protection, use and management of all natural resources for the needs and enjoyment of all the people. These guidelines apply to all grades K-8.

This presentation outlined one Iowa school's attempts at implementing this program.

Activities conducted during field experiences were shown, using a slide-tape presentation. A supplemental handout was included during a planned discussion period.

WILLIAM HAMMOND, Lee County Schools, Ft. Meyers, FL 33907

Holistic Environmental Education - Back to Basics

The challenge of education in the 80's will no doubt be centered in the arena of "knowing" natural systems from a human interrelationship perspective rather than from the cultural, perspective of resource use.

The focus of this session was to look at what the medical profession is saying in terms of brain functions and physically how people perceive the world around them. Then, in turn transfer that knowledge to strategies of instruction and curriculum development.

A Holistic perspective infers future solutions coming through an era of synergic thinking and acting rather than a continuance of our technological societal requirement of reductive thinking and acting.

Basic skills competencies in students and adults can be significantly improved when a wide variety of methods and media are legitimized in the everyday classroom environment. Thus, "the arts" are not to be left to the specialists but practiced by all teachers. This is also true of social and political activism skills critical to continuance of our democratic way of life. Evaluation processes must be looked at in this same view of Holism.

A world in the 80's must create ethical decision makers wise in the laws of natural systems.

OTTO HECK, Trenton State College, Trenton, NJ 08525

Making a Bryophyte Herbarium

Mosses and liverworts are often encountered on a walk in damp areas. Unknown to most bryophyte enthusiasts is that a very small amount of plant (gametophyte with attached sporophyte) is required to make a bryophyte herbarium. The technique used is to collect the specimens (for the group) in small patches (5" x 5"); place them in separate labelled plastic bags while on such a "lower plant walk." At the conclusion of such a walk, the plants can be very quickly mounted by the participants of such a group near a source of clean water.

Individual plants were separated by each participant from the desired patch, rhizoids washed free of all soil, then the plants are arranged on unlined 3 x 5 cards and covered with a similar size piece of waxed paper. Where plants are larger and limp, such as fountain moss, they are floated out-onto the cards-similarly to seaweeds. The cards are labelled on the reverse side prior to mounting. It is possible to make collages using several species on the same card or to arrange them on a larger card to indicate their position with respect to a significant environmental gradient. The finished cards are placed in a plant press for several days within a drying box. Enamel pans and pails filled with clean water proved useful when large groups are involved in such an activity.

W. R. HER, JOHN COTE, HELEN FEY and DEAN THOMPSON, Upper Dublin School District, Ft. Washington, PA 19034

Robbins Park for Environmental Studies: Planning, Development and Implementation

Robbins Park for Environmental Studies began as a dream in 1970. Interested science students and faculty saw the need for an undisturbed area within the township to carry out their peer-group environmental education programs. There was also the desire to build an attitude of ecological concern within the community. Through negotiations between school district and township, the Robbins Park area was chosen because of its accessibility from schools and its undisburbed state. School and Township joined together to provide funds and support to develop Robbins Park.

In 1974, after extensive surveying, trails were cleared and wood-chipped through the 40 acre forest, and bridges and signs were constructed and placed. All materials were now donated and work was done by high school students. A soil erosion dam was built to prevent erosion from a bordering housing development and the pond was cleaned and reinforced. In April, 1975, the Park was dedicated as an Environmental Study Center.

The development of Robbins Park did not cease with dedication. A historical springhouse was reconstructed that fall. In the 3 acre field, a colonial garden was established. Heralding the Bicentennial, a colonial

log cabin was constructed. The cabin serves as environmental learning center and headquarters for Robbins Park. The most recent addition to the Park has been a bathroom facility, funded by glass recycling efforts within the community.

Robbins Park is maintained by the school's Ecology Club and through summer employment by both township and school district. In addition, candidates for Eagle Scout have been invaluable in helping to develop Robbins Park: building a bird blind, establishing a marsh trail, and constructing a shed for storage of tools and other equipment. Presently, one scout is installing a visually handicapped trail. Funds for Eagle Scout projects come from the sale of firewood from fallen lumber at the park.

BARRY W. JAMASON, Coordinator of Environmental Education, New York State Education Dept., Albany, NY 12234

Environmental/Energy Conservation in the Instructional Program K-12

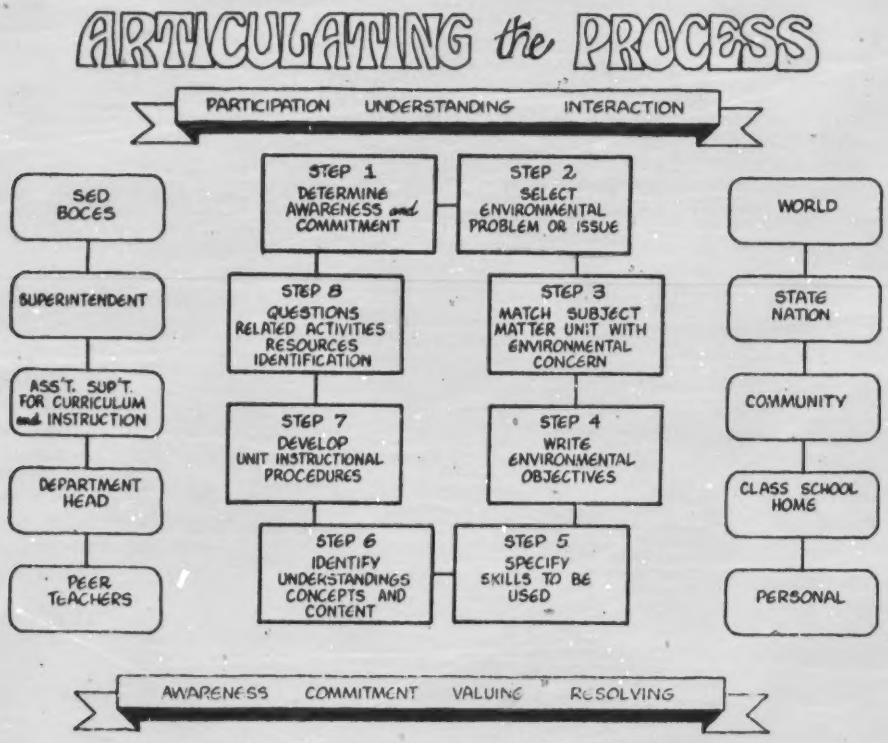
A great number of educators are concerned with environmental problems but many either do not see a viable connection between these problems and their instructional programs, or they do, but they are uncertain as to what is the most practical method for incorporating such concerns into daily instruction. In the interests of arriving at that method, consider these characteristics of environmental education:

an integrated educational process dealing with man's natural and manmade surroundings;
experience-based learning, using the total human, natural, and physical resources of the school and surrounding community as an education laboratory;
an interdisciplinary approach that relates all subjects to a whole-earth "oneness of purpose";
a rational process for improving the quality of life.

The major goal of environmental education should be to promote effective participation in the social processes which will prevent continued environmental degredation while furthering the means of improving the quality of life. If we accept the above as a rationale, the task remains to reduce the problem of incorporating environmental education objectives to its simplest terms. If we continue to "take time out" from the everyday instructional program to deal with environmental problems, they will remain adjunct concerns. On the other hand, if we prepare a program of instruction which is customized with, or has environmental objectives built in, our attention to such concerns will be as regular and automatic as the societal occurrence of the problems themselves.

The process illustrated below suggests a simple formula for curriculum modification, integration, or infusion which can be effectuated at any level of instruction, in almost any course of study, and with

varying degrees of involvement. At least, the procedure requires a small amount of additional planning time for a teacher, and, at most, it suggests a modest expenditure of district funds which will support such modification of the curriculum on a districtwide basis.


ARTICULATING the PROCESS
PARTICIPATION UNDERSTANDING INTERACTION
SED BOCES
SUPERINTENDENT
ASS'T. SUP'T. FOR CURRICULUM and INSTRUCTION
DEPARTMENT HEAD
PEER TEACHERS
STEP 1 DETERMINE AWARENESS and COMMITMENT
STEP 2 SELECT ENVIRONMENTAL PROBLEM OR ISSUE
STEP 8 QUESTIONS RELATED ACTIVITIES RESOURCES IDENTIFICATION
STEP 3 MATCH SUBJECT MATTER UNIT WITH ENVIRONMENTAL CONCERN
STEP 7 DEVELOP UNIT INSTRUCTIONAL PROCEDURES
STEP 4 WRITE ENVIRONMENTAL OBJECTIVES
STEP 6 IDENTIFY UNDERSTANDINGS CONCEPTS AND CONTENT
STEP 5 SPECIFY SKILLS TO BE USED
WORLD
STATE NATION
COMMUNITY
CLASS SCHOOL HOME
PERSONAL
AWARENESS COMMITMENT VALUING RESOLVING

WILL JOHNS, LARRY SHAFFER and STEPHEN ULSH, Office of Information, Pa. Fish Commission, Harrisburg, PA 17120

Fundamentals of Fishing

The purpose of this program was to introduce the novice angler to the various types of fishing equipment, present information on how to use this equipment, and suggest some effective methods of catching the many fish that are abundant in Pennsylvania's waters. Considerations such as habitat and food preferences as well as how the time of year influences available fish were discussed.

The presentation consisted mainly of a series of demonstrations using types of tackle, such as live bait and different types of lures, a hands on opportunity for some of the participants to actually do some fishing, terminated by a filleting and cooking demonstration and clinic.

Participants were supplied with a small packet of material on Penna. fishing, including material covered in the presentation.

WALTER A. JONES, Chief Naturalist, Somerset County Park Commission, Environmental Education Center, 190 Lord Stirling Rd., Basking Ridge, NJ 07920

A Gift From the Sun: The Alternate Energy Experiences of an Environmental Education Center

The Somerset County Park Commission Environmental Education Center's 18,000 sq. ft. Interpretive & Education Building was the first fully solar heated and cooled building of its kind in the nation and one of the first of its kind in the world. Planning began in 1971 with the National Science Foundation, construction in 1974, completion was in 1976. The building began to serve the public in 1977.

Solar energy research and energy education programs are conducted under a $997,000 Federal Dept. of Energy contract. The solar energy system combines both active and passive solar applications. A wind electricity generation project is being conducted by Rutgers Univ. on the site, and the Center is conducting an unusual solar/wind aquaculture project as well. A large energy exhibit hall is under construction.

Alternate energy programs are conducted for upper elementary through adult groups with over 7,000 people per year involved in the Center's energy education work. Energy education is only one portion of the Center's environmental education efforts, however, with over 20,000 people involved in environmental education programs per year, and another 30,000 "casual visitors" per year.

This program described the alternate energy work of the Center in context with the Center's overall purpose, using a brief slide program. A 1/2 hour 16mm color documentary film about the solar energy project was shown during the Tuesday evening Film Festival.

WILLIAM A. LEBER, P.O. Box 424, State College, PA 16801

Siting and Landscaping a Home for Energy Conservation

During our short age of abundant fossil fuels, builders, designers, homeowners, and homebuyers forgot about energy conservation when planning their homes.

The activity presented was designed to introduce selected design criteria for 1) the selection of a home site, 2) the orientation of the building, and 3) the use of existing or planted vegetation. The design objective is to reduce the energy required to heat or cool a home in the northeast.

TOPOGRAPHY

In essence we consider the house as an integral part of the environment. The site is chosen on the basis of the topography, the orientation of the slope of the land to the path of the sun, the existing vegetation, and the patterns of winds and storms. The house is oriented to maximize solar insolation in the winter, spring, and fall months while minimize the effects of winter winds. Deciduous vegetation and window overhangs are considered on the south side of the building for reducing summer heat.

The activity was broken into three parts: 1) a short explanation of the design factors, 2) a critical look at real and hypothetical home locations and orientations, and 3) a small group activity of siting, orienting and landscaping a home - a simulation of an energy conserving design team.

Printed resources to remember:

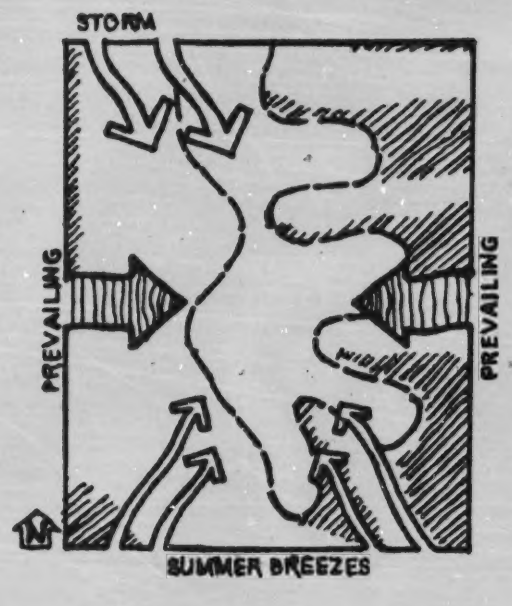
1. Crowther, Richard L., et.al. Sun Earth: How to Use Solar and Climatic Energies. New York: Charles Scribner's Sons, 1977.

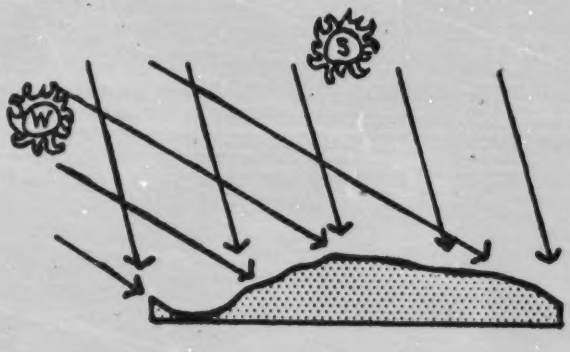
2. Foster, Ruth S. Homeowner's Guide to Landscaping that Saves Energy Dollars. New York: David McKay Company, Inc., 1978.

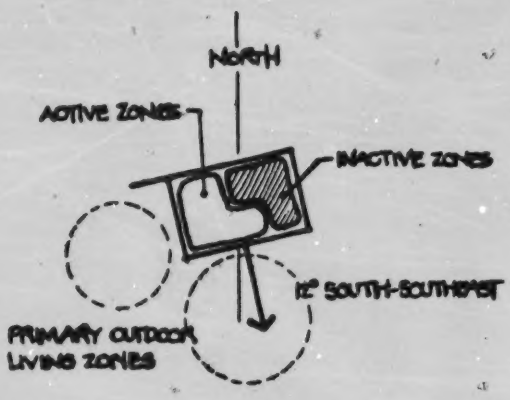
3. The U.S. Department of Housing and Urban Development. Solar Dwelling Design Concepts. U.S. Government Printing Office, Washington, D.C. 20402. (republished by New York: Drake Publishers, Inc., 1977, ISBN 0-8473-1574-6 pbk.)

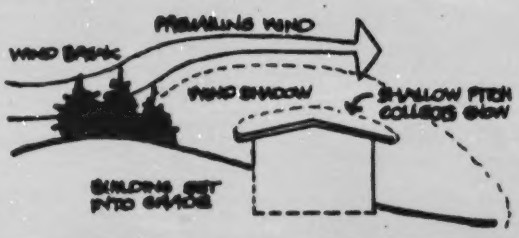
4. Leckie, Jim, et.al. Other Homes and Garbage: Designs for Self-Sufficient Living. San Francisco: Sierra Club Books, 1975.

5. Merrill, Richard and Thomas Gage (eds.) Energy Primer (revised edition). New York: Dell Publishing Co., Inc., 1978.

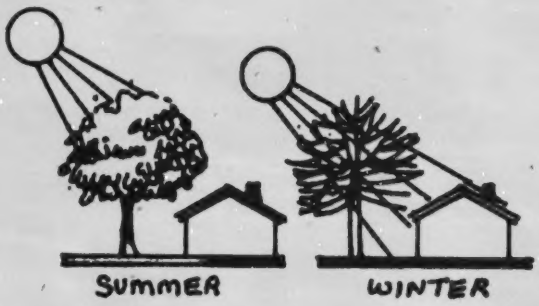








6. Prowler, Don (ed.) Passive Solar: State of the Art. Proceedings of the 2nd National Passive Solar Conference, 1978. (available from Mid-Atlantic Solar Energy Assoc., 2233 Gray's Ferry Avenue, Phila., PA 19146. A three volume set for $20.00)



DAWN G. LENNON and HARRY T. BARNES, Penna. Power and Light Co., 2 North 9th St., Allentown, PA 18101

Energy Conservation Education in Schools

Highlighting current, functional, energy education programs and curriculum plans in Penna., this presentation described PP&L's involvement in energy education programming and explained the Company's interest in energy/conservation education. Discussion of approaches to teaching energy relationships and conservation issues in schools and communities was supplemented with relevant displays and films that depicted pertinent conservation methods. Hands-on activities for use within the classroom and in the outdoors were also demonstrated. In addition, handouts which served as resources for further review of school programs and activities were included in an information kit provided by PP&L. References, bibliographies, and film indexes were also included.

ED MC CREA, U.S. Fish & Wildlife Service, Div. of Wildlife Refuges, Branch of Resource Management, Washington, DC 20240

Public Education Efforts in the U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service is undergoing major changes in its education and communication programs. Recent policy decisions are designed to encourage increased use of education as a management tool throughout the Service. In addition, education and communication efforts will focus more directly on problems affecting fish and wildlife resources.

Interesting examples of the Service's increased emphasis on educational programs can be seen on many National Fish Hatcheries, Research Stations, and National Wildlife Refuges. For example, San Francisco Bay and Minnesota Valley National Wildlife Refuges and Leesburg National Fish Culture Center are developing innovative and exciting programs.

MARTHA E. MUNZER, 2728 NE 32nd St., Apt. 3, Fort Lauderdale, FL 33306

Introduction to Land Use Planning

Land use planning is one of the key elements in Conservation, for

what is done with and to our land determines in large measure what happens to the health of our habitat--and to us.

To introduce young people of upper elementary and high school ages to some important concepts of land use planning the presentor demonstrated a few simple techniques by way of games or simulations. For the urban scene, it was role-playing on "what's to become of that vacant lot?" Ideas on cluster development, pro and con, were presented. In the suburban setting, planning a community from the ground up introduces the principles of "New Town" planning in areas where there is still plenty of undeveloped land.

Ms. Munzer cited as references books she wrote as a staff member of the Conservation Foundation: Planning Our Town, Pockets of Hope, Valley of Vision: The TVA Years, Block by Block: Rebuilding City Neighborhoods, New Towns: Building Cities from Scratch.

The session was concluded by referring to a real-life story: the significant role played by a group of high school students in Mamaroneck, New York, in helping the town reach an important land use decision.

RICHARD NUGENT, U.S. Fish & Wildlife Service, Div. of Wildlife Refuges, Branch of Resource Management, Washington, DC 20240

Tinicum National Environmental Center

An exciting example of the U.S. Fish and Wildlife Service's new educational efforts is the Tinicum National Environmental Center. Although a unit of the National Wildlife Refuge System, Tinicum represents a new direction for the Service. Located in urban Philadelphia, the project was established in 1972 to (1) preserve, restore, and develop the Tinicum Marsh; (2) construct a wildlife interpretive center for environmental education; and (3) afford visitors an opportunity for study of wildlife and its habitat.

A look at the past history, present status and future plans for the 1,200 acre refuge indicates that the Service is developing an important educational effort focused on the problems affecting wildlife resources in a heavily populated and developed area.

DENISE OLCZAK, Director, Energy Stewardship Program, Lakeview School District, R.D. 1, Stoneboro, PA 16153

Does Energy Education Belong in Our Schools?

Energy is that strange stuff that makes the universe operate. It isn't anything--yet it is everything. There isn't any simple way to describe energy. We can show some of the things that produce or transmit energy--or things that receive energy. The energy itself remains elusive. Doing anything takes energy whether you are a plant or a rock--

an animal or a person. Just as money is the currency of the business world, energy is the currency of the universe. Without it, everything would come to a standstill.

Energy moves our cars, puts the glow in our lights, produces heat in our homes, lets us move. Energy is so much a part of our lives that we seldom think about it. And because we don't think about energy or how we use it, we all waste a great deal of it. Such waste and careless use are part of the reason why some resources are in such short supply. Since energy is so all pervasive in our lives, it is taken for granted. It is not until a shortage of some form of energy emerges that we separate energy concerns out of the background of our lives. Even then, we seldom worry too much, for we have come to believe in the technological fix. However, all energy sources come from the environment and securing them and converting them to forms suitable for our human use has broad impact on the environment upon which we also must depend for our survival. This is further complicated by burgeoning population worldwide and ever increasing per capita demands for energy. Thus energy education must deal with a broad spectrum of topics in addition to the science and physics of energy. In addition to helping students discover the facts about energy and its sources, conversions, and utilization, energy education must deal with citizenship education concerning individual and social action regarding demand for and utilization of energy.

Dr. James Gallagher, Director of Science and Mathematics Teaching Center at Michigan State University, and his teaching staff have developed a good set of categories for energy education that indicates a range of concerns. First you might focus on the definitions and concepts of energy—followed by sources of fuels, their use and conservation. Another focus can be on the technology of energy production and transmission. The economics of supply and demand is playing an increasingly important role with the impact of imported oil on the American consumer. Current energy legislation has also brought the politics of the situation sharply into focus. The last two categories are probably the most important. These are "quality of our environment" and "quality of life." No single teacher can cover all these areas, nor are all of them appropriate to any given developmental level. Indeed, these are concepts that are constantly expanding throughout the lives of most people. The concept of energy itself is very abstract. Many PhDs in physics will, when pressed, admit to a poor conceptualization of energy. Obviously then, we should not expect elementary students to understand what energy <u>is</u>. On the other hand, it is quite possible to observe concretely many things that energy <u>does</u>.

The Lakeview Energy Stewardship Program is designed to deal with a wide range of developmental levels and education categories. Energy education for the very young is not neglected. Here primary students are learning that everything requires energy to move. To reinforce the concept that energy is used constructively in day to day living, each student took their turn cranking a freezer to make ice cream. It sure was a sweet way to end a unit of energy education.

The ultimate source of all energy is the sun. Fourth grade students constructed a variety of objects to demonstrate the potential usefulness of solar energy. From heating buildings to cooking food, the students proved that solar energy really does work, even in northwestern Penna.!

Convection and conduction, expansion and contraction, soon became familiar words for fifth graders in their study of heat as an energy process. After so many years wondering "why water does what it does," the students learned why water evaporates, clouds rain, and ice forms. Heat, they discovered, after participating in numerous experiments, is a pretty important energy process.

Where does cross country skiing fit in an energy program? Elementary physical education classes, using the activity of cross country skiing, dealt with the problem of energy utilization. Third and fourth grade students learned to enjoy a winter activity which emphasizes physical use of energy rather than fossil fuel resources. "People Power" is what we call it.

For the past two years junior high school students have been involved in a program entitled "Stay Within Your Boundaries." The idea behind the program is to make people aware of the places of ecological, historical, and recreational value which are located within our own county. In this way, conservation of energy, increased community pride, and further awareness of quality of life and our environment will have been achieved.

Chemistry students decided that they were tired of being too hot in the summer and too cold in the winter. There had to be a solution to this problem. After research and experimentation, plans were drawn for a solar window heat to be used for extra winter heating. It is in the process of being constructed now. Too much summer heat was another aspect of the problem. There seemed to be no solution to be found. Then it dawned on one of the students that the answer was right in the room already. Why not paint one side of the window blinds white to reflect the heat, and the other side black to absorb the sun's rays? So far, it seems to be working!

Wood is playing an increasingly important role for home heating as fossil fuel sources continue to rise in cost. In this energy unit, high school students learned home woodlot management techniques, safe use of equipment, and terminology associated with this activity.

Energy education should be included in all subject areas not just in science. Our music and art students participated in a three day creative arts experience at the McKeever Environmental Learning Center to discover the sun's effect on our planet Earth. Home Economics classes have looked at house design and construction--and studied practical ways to reduce energy waste within the home.

A popular approach to energy education within the Energy Stewardship Program has been through the construction of a diversity of projects. Log carriers were constructed in wood shop classes. How about a puppet show about energy created in an English class, or maybe you would prefer

having your students improve their motor skills through the construction of down socks which demonstrate the properties of insulation. Energy education certainly isn't dull at Lakeview!

What better way to understand energy legislation than to go through the complete process yourself. Social studies students did just that--from individual energy bills to committees to a two day mock convention where the final bills were drawn up, submitted to the legislature and eventually passed.

Energy education is a life long process. As with other aspects of environmental education, there must be effective adult education--there must be adult support. Recycling of paper has drawn tremendous community support and has also been extremely profitable for the club sponsoring this project. With community help, the social studies department is building a log cabin. They hope to demonstrate that we can still learn something from the past about energy conservation and recycling. Adult workshops dealing with energy alternatives such as solar, wind and conservation have opened up new avenues of information for community members to use in their attack on ever increasing fuel costs. Where do we go from here? As an educator, the choice is now yours.

DONALD PERKINS, Houston Independent School District, Lantrip Ecology School, 3830 Richmond Ave., Houston, TX 77027

Everyone Will Help: An Environmental Education Program

In the summer of 1975, the Houston Independent School District received permission from the Federal Courts to develop a Magnet School Program to aid the process of integration and provide innovative methods of instruction. One of the programs to be developed was an environmental studies program for third through sixth grade students to be located at Lantrip Elementary School, an inner-city school in a predominately Mexican-American Community. Historically, the school had used vegetable gardens as a motivating device, and the principal wanted to continue and increase this instructional method.

In the two month period between the court decision and the first day of school, a staff was selected, a curriculum was designed, and orders for supplies and equipment were made. Then the staff started planning the environmental study areas they wanted. It was determined that no one could live without a greenhouse, a recycling center, an orchard, intensive vegetable gardens, and plantings of native and exotic flowers and shrubs. However, none of the staff had training sufficient to design and create these areas.

The school found that by asking more than enough help was available. The presentation consisted of slides of the school's facilities, suggestions of whom to talk with, and a compendious list of mistakes to avoid in developing environmental study sites.

RAY PFORTNER, U.S. Environmental Protection Agency, 26 Federal Plaza, Rm. 1005, New York, NY 10007

The New York City Environmental Education Advisory Council: A Case Study in Successful Networking

The Environmental Education Advisory Council is a group of volunteer professionals in active support of environmental education in New York City. Formed as a direct result of the 1974 Mohonk Conference on Outdoor Education for New York City, the Council has grown to include over 80 individuals from the City's key educational institutions and organizations. Today over 40 groups are involved.

The EEAC has the following goals:

1. to provide a forum for the exchange of ideas and methods among professionals in the environmental field;
2. to bring together and support existing programs for cooperative and complementary efforts;
3. to undertake, encourage, and/or facilitate further study of environmental education;
4. to advise the New York City Board of Education and other educational institutions in matters of environmental education;
5. to act as an advocate for the establishment of environmental education programs;
6. to disseminate environmental education information; and
7. to be a catalyst for positive change in environmental education and environmental management.

Since its formation, the EEAC has published three brochures: a report on the 1974 conference; The Art of Trip-Taking, A Guide to Day-Use Facilities In and Around New York City; and A Guide to Residential Facilities for Environmental Education in the New York Metropolitan Area. It has surveyed professional training programs offered in the City. EEAC also takes part in conferences and environmental fairs and offers environmental education training programs for teachers and administrators in school districts throughout the City.

EEAC offers the New York City educator inside and outside the school system: new brochures and teaching materials on the whys and hows of environmental education in New York; training workshops for teachers and administrators alike; consultation and assistance on establishing environmental education programs and centers.

DR. WILLIAM R.M. RITTER, RUTH ALMOND, JOHN COTE, DEAN THOMPSON and DAVID WALTMAN, Upper Dublin School District, Pt. Washington, PA 19034

Peer Group Instruction: An Alternative to Environmental Education

One of the major problems with Environmental Education is that it

does not "fit" into most curricular offerings. Our Science Department has been firmly committed to the need for providing environmental curricula at all levels of education.

Upper Dublin's Environmental Education Program got its start in 1970 with a start up grant from Project KARE. With these funds we were able to train 15 senior high students in some of the basic environmental concepts and teaching strategies. In the spring, we took 120 sixth grade children on a 3 day-2 night environmental immersion experience. All of the teaching was done by the peer group instructors. Eight to ten sixth graders were assigned to each peer group instructor for the duration. The program was a success, and it continues to this day.

Since 1970, the program has expanded to our entire sixth grade, approximately 400 students. We now have our own 40 acre Environmental Park with a headquarters for intensive on-site studies. We now train 50 to 60 peer group instructors each year by way of a partial credit course taught at the high school. These peer group instructors also teach 5 lessons to all 4th and 5th grade students with the emphasis on Teaching Response to Environmental Demand (TREND).

It should be stressed that the curriculum was developed by the students. Our approach to environmental education has allowed for the program to be a success without an additional burden on the staff. At the present time, we have planned activities for all grade levels K-12.

HELEN ROSS RUSSELL, American Nature Study Society, RD 2, Myerstown, PA 17067

Wild Foods

Among the post World War II "improvements" came insect free, oversized crops, cleaned and neatly packaged and jetted to supermarkets from all over the world. Vitamins came in bottles. Seasonal scarcities and variations were eliminated. Who needed or wanted to bother with foraging?

But pendulums swing and more and more people today are discovering the joys of a wild harvest. Some flavors like wild strawberries and wild blueberries can never be duplicated. Foraging helps people tune in to the natural world; for the successful forager must know and respect plants. Wasteful, destructive foragers are doomed to go hungry the next season; ignorant, careless ones may not survive to another season.

Foraging is part of our roots and knowing how our ancestors and other cultures used wild food can add to our understanding of the past and present. Foraging dramatizes the problems of ecology including land management, exotics, lead and heavy metals, chlorinated hydrocarbons, and water use. It has social implications, too, for foraging was and can be a family activity. Finally with inflation we are discovering that waste is expensive and harvesting some of the abundance in our dooryards can help balance the budget.

These field trips emphasized identification, proper harvesting, use and culinary history of common plants.

RUDOLPH J.H. SCHAFER, Program Director, Environmental Energy Education, California Dept. of Education, 721 Capitol Mall, Sacramento, CA 98514

California Interagency Project

Representatives of 13 state resource management agencies and the Dept. of Education are working together to develop a comprehensive K-12 school program through which youngsters can learn the basic principles and practices of resource management, as well as the role they and other citizens can play in preserving California's environmental health and productivity. The project will result in the production of a comprehensive Course of Study, curriculum materials which will show teachers how to teach environmental concepts through the basic skills and related subject areas, and a statewide staff development program.

An Interagency Steering Committee, which has been meeting for the past several months, has developed a set of goals upon which the project will be based. These goals call for a program which will help youngsters: develop a personal way of living which supports the environmental rights of others and contributes to the long-term maintenance of a healthy and productive physical environment; develop the ability to create viable solutions to environmental problems and to work independently or with others to implement them; develop an understanding of how cultural and social values, ethics, and morality affect the way people treat--or mistreat--the environment and its resources; understand how people interact through their government, legal system, economy, and other social mechanisms and institutions to make decisions affecting the environment and its resources; understand the principles and practices as well as the possibilities and limitations of environmental-resource management technology such as land use planning, soil and water conservation, energy production and conservation, pollution control, renewable and non-renewable resource management, and wildlife protection; understand the scientific principles which govern our interaction and interdependence with the physical universe; develop an appreciation of natural beauty and aesthetically pleasing surroundings and a reverence for all forms of life.

These goals have been written into the County Superintendents' Cooperative Course of Study, which is being developed for statewide use by the Alameda County Office of Education. The Cooperative Course of Study will outline the basic content of all subjects taught in California public schools, grades K-12, and will also show how these subject areas relate to each other. The completed document was due for publication June, 1979, and will be used by school site councils and curriculum writers in developing local school curricula.

The Interagency Steering Committee will base their materials and activities package on the Cooperative Course of Study. The completed work will provide specific teaching suggestions and examples of materials for each appropriate grade level and subject area, sources of information and assistance, and a plan for staff development. Each of the participating state agencies will have a hand in developing the materials in cooperation with each other and with representatives of the educational community. Development of the materials and program activities will begin in July.

In addition to state agencies, a number of Federal agencies, private conservation groups, local education agencies, and others are involved in the project. The presentor is serving as program manager.

State agencies participating in the project include: Resources Agency, California Conservation Corps, Parks and Recreation, Energy Commission, Solid Waste Management Board, Water Resources Control Board, California Coastal Commission, Water Resources, Dept. of Conservation, Caltrans, Dept. of Fish and Game, Dept. of Forestry, and Office of Appropriate Technology-Planning & Research.

Assisting the state agencies are a number of organizations, including the Offices of Education of the following Counties: Los Angeles, San Bernardino, San Luis Obispo, Humboldt, Lake, San Joaquin, Fresno, Merced, Alameda, Santa Clara, Contra Costa, and Sacramento.

School districts assisting, include: Los Angeles, San Juan, Pittsburg, San Francisco, San Ramon Valley, and Berkeley.

Additional organizations involved in the project include: California State University-Hayward, Lawrence Hall of Science, California Natural Resources Federation, U.S. Forest Service, U.S. Dept. of Interior-Bureau of Land Management, U.S. Dept. of Interior-Bureau of Reclamation, and Environmental Coalition of Orange County.

PATRICIA SCHRIEBER and JANE HERRMAN, Morris Arboretum of the University of Pennsylvania, 9414 Meadowbrook Ave., Philadelphia, PA 19118

Plants Under Stress

The adverse enyironmental conditions existing in cities may seem to produce extreme reactions in the plants that live there. However, even in less densely populated areas, plants often grow under stress. Fortunately, there are techniques that can be used in growing plants in order to reduce the severity of the stress situation: chosing the best tree for a particular location (i.e. pollution resistance, ultimate size and appropriateness for existing soil conditions), evaluating highway maintenance methods (i.e. snow removal) and correcting soil conditions.

Philadelphia is an example of a city where the need to preserve and promote green space is very important. The Morris Arboretum of the University of Pennsylvania is helping to increase Philadelphians' awareness

of the role they can play in the urban environment through its educational progrmas. Research projects being carried out by the Arboretum focus on specific environmental stress problems. The Penna. Horticultural Society is helping community groups to recapture at least some part of their immadiate environment with its innovative horticultural projects. The city-wide scope of their program has united the efforts of diverse neighborhoods and made a strong impact on the overall greening of Philadelphia.

More than ever, people who live in major metropolitan areas are using parks, arboreta, botanic gardens and environmental centers located in and around the cities. It is just as important to conserve our urban plants and their habitats as it is to preserve the larger areas of green space outside the cities. We must look to the many environmental resources found within the cities, which up to now have been largely ignored. Maximum utilization of these plants, people and limited open space should be a major goal of conservation education.

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Teacher Competencies--Environmental Education and a Model K-12 Program

The panel of three introduced the many elements necessary to insure an adequate environmental instructional program in the local school district.

The history of the development of environmental education in Penna. was considered from the point of view of the State Dept. of Education, the colleges and local school district levels.

Each panel participant identified the elements of his/her program responsibility in environmental education as they initiate and expand program activities.

Penna. has eleven colleges preparing teachers as environmental educators. These teachers are the foundation for the initiation of many instructional activities from kindergarten through twelfth grade.

GARY J. SEVERSON, Environmental Education Coordinator-USDA, Forest Service, Rocky Mountain Region, Denver, CO

Investigating Environmental Issues in the Media

Environmental issues face all of us today. Young and old, rich and poor, urban and rural, it makes no difference who we are or what we are, environmental issues affect our lives daily. Because most environmental issues are extremely complex, many citizens do not understand the complete problem. And, without understanding the problem, personal involvement in the solutions to the problem are non-existent. Participants in

this session discovered a logical process for investigating environmental issues through the media by collecting data, organizing and evaluating the data collected, and designing positive actions for resolution.

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KARE in the National Diffusion Network

In May 1975, Project KARE joined the National Diffusion Network (NSN) of the United States Office of Education (USOE) as a Developer/Demonstrator Project. KARE was accepted into the NDN after careful scrutiny by the Nation Institute of Education and USOE. Factors such as exportability, program fidelity, and educational impact on children were carefully examined. It was found that the KARE approach to strengthening environmental studies in local schools was educationally sound, cost effective, and easily adopted by local schools.

Since joining NDN, KARE staff have conducted 81 training workshops (three-day) in 21 states resulting in 229 adoptions by local school districts and non-public schools. Over 2000 staff have been trained, impacting directly on more than 75,000 students in grades K-12.

During the three-day training workshops, participants experience a "down-and-dirty" approach to dealing with real environmental concerns. At various stages, the participants collect and analyze data from field studies; prepare plans for local action programs of environmental studies; and receive complete sets of KARE materials. Following the workshop, the participants install their local action programs into the on-going curricula of their schools. During 1979-80, Project KARE staff will conduct an additional 15 adoption training workshops sponsored by the National Diffusion Network.

ELIZABETH H. SMITH, Saratoga Capital District State Park & Recreation Commission, 595 N. Broadway, Saratoga Springs, NY 12866

Interagency Environmental Education Projects

The interrelationships of human, cultural and biophysical systems which form our environment stretch over such a broad spectrum of disciplines that many government agencies deal with some aspect of them. That portion of environmental subjects which requires interpretation to the public properly falls under the function of education. Willingly or not, many agency employees find themselves in the role of environmental educators. One of the problems staff members experience in dealing with this role is how to deliver such educational services most efficiently and effectively.

By combining efforts, agencies can work together to reduce costs, avoid duplication, pool resources and streamline delivery systems to the benefit of all. On paper, coalitions look like the perfect, logical and rational solution; but any kind of alliance involves the interests and constraints of member organizations, and that imperfect and illogical creature, the human being. Therefore, to design a flexible, effective alliance, it is necessary to understand how people and organizations function.

People group themselves into organizations to derive strength from shared resources, to obtain mutual benefits, and to achieve common goals. The organization, in turn, gives the individual a certain identity, uniting and guiding group behavior. An organization is designed to serve a primary beneficiary, which may or may not be the same as the clientele which is the target of services. For example, a state conservation agency may aim its educational efforts at school children, while the primary beneficiaries of the department's services are that state's adult hunters and fishermen. There should be some degree of congruence between target and beneficiary; school children grow to become adult sportsmen. The higher the degree of congruence, the more efficient is the educational effort.

It is important to have a realistic assessment of the target population served through interagency cooperative planning. "Citizens of the State" or "tourists" are terms too broad to be meaningful. "Bringing urban fifth graders to a resident camp for a week of ecosystem study" is a goal much more likely to be effective, both educationally and financially, because it is specific. The time-tested process of listing goals and objectives should be followed in planning and carrying out the cooperative project. Periodic assessment should keep the plan on track and provide a measure of effectiveness. To justify expansion of a program, planners should follow an "if-when" model. Taking the example above, the plan would state: "If by June of 1981, 75% of the fifth grade students in the Rochester City School District have attended the ecology camp, a study unit on urban ecosystems should be offered in sixth grade classes the following school year."

In organizational structure there are four generally accepted elements which are needed to accomplish goals: 1) the division of labor, or task allotment; 2) the delegation of authority, involving chains or communication and accountability; 3) the organization's structure of pattern of functions; and 4) the span of control for each supervisor. These elements function most clearly in a bureaucracy. Inherently rigid structures, bureaucratic agencies become less efficient when forced to deal with rapidly changing external conditions. Agency employees required to respond to change may find themselves frustrated, powerless to function in accustomed ways; the constraints upon government employees are often organizational as well as financial. Then, too, there is a longer time lag to internalize and apply new methods and new ideas in an agency, as compared to a private group. When citizens call for government action, the response will be delayed while the request goes through

procedural channels. This leads to anger and frustration on the part of the citizen activist. Both sides become less functional, ill-will is generated, and little is accomplished.

A recent trend in management is the approach of organizational development agents, who seek to correct dysfunction within groups by recognizing the needs of the individual through improvement of intrapersonal relations, creation of logical processes for resolving conflict, and achievement of goals. Recognizing that group members have basic individual needs to achieve identity and self respect, to be useful and to express their creative abilities, the behavioral approach to organizational management strives for understanding and respecting human motives and behavior.

Human factors are important in the functioning of organizations; they are crucial when organizations form alliances. While agencies may be bound together by formal laws or policy statements, at the operational level the binding agent is a human network. Network linkages may be informal "huddling" groups of co-workers who meet to exchange ideas over coffee, or they may be officially appointed interagency committees.

When organizations have made a commitment to share resources and enter into cooperative planning, each unit stands to lose some autonomy in the process, and trade-offs between that loss and anticipated gains must be weighed to be sure that the outcome is worth the costs. Each group will tend to protect its own turf and to resist any potential loss of power. Ofter a problem solving workshop, conducted by a leader trained in management, perhaps on neutral territory, can start a group towards true cooperation.

When representatives from different agencies get together, their time is ever better spent in nurturing the working relationship rather than in listening to lengthy agency reports. The Western Regional Environmental Education Council (WREEC), a coalition of education and resource agency personnel in eleven western states, has been operating with notable success since 1973. Working to help each state develop environmental education plans for schools, higher education and teacher training, and to train state employees, leaders of the WREEC alliance found that their members profited most from small group workshops at their biannual meetings. By exchanging materials, information and expertise, and by developing vital network linkages, members increased their skills and their job effectiveness.

It sometimes happens that the people working together do not come from the same pay or authority level in their respective organizations. In such cases, members must accept this as a given condition and work to create respect for personal abilities. A good range of personalities and perspectives gives the project a creative balance.

Predetermined external conditions are the size of an agency's budget, the mandate of its services, the size of its staff, and the legal constraints upon its administrators. Internal factors, which can be manipulated, include agency traditions and precedent, the existence of power struggles, and the attitudes of personnel towards the other agencies.

It is useful to know something of the background history of the member agencies in order to recognize both the internal and external conditions. In New York State the three agencies working towards cooperative planning in environmental education are the State Department of Education (SED), the Department of Environmental Conservation (DEC), and the Office of Parks and Recreation (OPR). The Department of Education traces its ancestry back to 1784, and has been operating out of the same building in Albany since 1914; it is firmly entrenched in the state government. SED is thus less susceptible to changing personnel or political appointments than the other two agencies. DEC and OPR have been closely entwined over the years. When the Conservation Department was created in 1927, the Council of Parks became a subunit. In 1970, DEC was formed and its former parks division became a separate Office of Parks and Recreation in the Executive Department. To give an indication of some of the intricate relationships involved, the jurisdiction for state historic sites, once under SED, is currently under OPR. Personnel now working in separate agencies may have had adjoining desks ten years ago; these bonds of common training and friendship should be used to strengthen the alliance rather than to further competitive relationships.

In examining an agency's reasons for carrying out environmental education programs, it is wise to look at both the enabling legislation and at a recent report of agency policies. Agency policy statements, as found in reports issued to staff or to the public, are apt to be up-to-date and to reflect accurately current practices. Finding that a state's Department of Parks is striving to use facilities year round, to increase access to park programs, and to serve the camping public gives planners important information. Knowing the agency's priorities helps to direct cooperative educational plans in ways which will have the best chances of being adopted.

Thus far, the coalition mechanisms discussed have followed the lines of a coordinating council, a form which offers an instant organization. Other strategies include establishing a clearinghouse which acts as an independent body with high community visibility. Similarly, a pilot project launched by the participating agencies can demonstrate the viability and legitimacy of the cooperative venture by establishing a track record. The progeny group evolves from the parent organizations. If that evolution is low-key and incremental, the coalition may be viewed as safe and non-threatening, as well as useful. Data gained from a time-limited project can be used for evaluating the alliance's success, forming the basis for decisions to proceed, alter course or disband.

Alternative strategies for network linkages include using a key person or a single, lead agency to initiate coordinating activities. These approaches could involve a high degree of risk; the key person could become ill, lose interest, or be transferred to other projects. The lead agency could assume total control, not allowing the other coalition members to participate as partners. But when appropriate, this "single portal" approach can be very successful.

If money is not allotted, can agencies initiate new programs under existing budgets? The answer is "yes" for the short term, but "no" for the long run. Funds can be reallocated from existing budgets for limited periods of time to cover staff assignments for coalition projects. But for sustained growth, a viable project must look for further support. Grant money can help during the initial phases, but eventually, a project should be able to generate at least part of its own funding. If the cooperative program develops a core constituency which demands its services, the agencies may be able to justify an increased budget to the legislature at a future date.

Finally, just as state agencies do not exist in a vacuum, their cooperative environmental education ventures must be finely attuned to other groups and individuals, both public and private. It may become necessary for many reasons to include members of conservation groups, or to work with faculty from universities. The alliance should ideally be flexible enough to expand; this exemplary elasticity could also be useful if funding cutbacks required that the coalition narrow its efforts. For a coalition of state agencies to form, it must have the benefits of management and human relations skills. For an interagency alliance to survive, it must have in addition a membership working towards valid goals with commitment and enthusiasm.

While many of the strategies for combining organizational forces outlined are general enough to apply to many different types of alliances, the mechanisms can be used to produce more efficient and more effective agency programs in environmental education. When agencies dispense information and educational programs dealing with any aspect of people and their environments, we can all benefit if those programs are the result of a strong, combined effort.

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Environmental Studies & Emotionally Disturbed Adolescents

An innovative program which provided patients with opportunities to go on environmental field trips and to build model ecosystems during their hospital stay was in operation during an 8-week summer period on the Adolescent Unit at Fair Oaks Hospital. The Adolescent Unit treats individuals with emotional problems under the supervision of its director, Adrian Sondheimer.

The program, developed by hospital Educational Coordinator, Mrs. Patricia Tarashuk, focused on environmental studies. By providing a refreshing atmosphere utilizing out-of-doors activities and experiences, children were helped in developing a true environmental appreciation as well as self-awareness. Director of the program was Robert Simmons, science teacher in the Millburn school system. He highlighted the ecology and historical development of New Jersey for the hospital's patients who range from 14 to 18 years old.

Some activities included:

collection and identification of plants and trees;
making a botannical map of the hospital grounds;
building of mini-ponds on hospital property for a comparative study of algal growth;
building and daily observation of aquatic and terrestrial ecosystems.

In addition, field trips were taken to the Delaware Water Gap Area, Stokes Forest, Sandy Hook, Pahaquarre Copper Mines, and the Watchung Reservation.

THEA TEICH, Environmental Education Coordinator, Carnegie Museum of Natural History, 4400 Forbes Avenue, Pittsburgh, PA 15213

Non Formal Education for Non-Captive Audiences

In education, environmental or otherwise, two factors determine what and how we are going to teach: our objectives and our resources. Educators at non-formal institutions have a third concern, one that is pre-eminent, and that is audience needs.

Non-formal education includes the educational activities that occur at historical sites, museums, nature and environmental centers, and parks, indeed, all those places that consider education a major objective, but whose audiences are free to come and go as they please. These audiences are not officially held in place by governmental statute, as are school children, or by large monetary investment, as are college students or special workshop participants. Therefore, their commitments to the programs or sites they visit are more often than not, minimal.

Who comprises these audiences? What are these people like? A study by the American Association for State and Local History (AASLH) says, with tongue-in-cheek, "There are more of them, and they wear less." The study also states, "they come not to pay homage, but to satisfy their nostalgic feelings about the past, to enjoy themselves, and to learn."[1] Very often, the visitors have been to other historical sites; they are accustomed to sophisticated, professional interpretation; and coupled with the strong nostalgia and desire for cultural roots, they exhibit an extraordinary curiosity about historical people. Furthermore, provided they find their visit satisfactory,[2] they will willingly encourage others to visit the site.

A 1973 survey by the Metropolitan Museum of Art in New York City characterized its audience as young, well-educated and fairly well off. Nearly 70% of those surveyed were under 40 years of age; 54% had graduated college; and 33% had annual incomes of at least $20,000.[3]

Carnegie Institute's survey of 1976 indicated also that visitors tended to be young and relatively well-educated. The study asked some other questions that were possible only because the Institute houses

both a Museum of Art and a Museum of Natural History. Only about 15% of the visitors surveyed were members, but more members were visiting the Museum of Art than the Museum of Natural History. About 47% of those surveyed were there to visit only the Museum of Art. Another 42% were visiting both museums and only 11% were visiting the Museum of Natural History alone. Of these last, however, 23% were from out of state, an interesting fact when it is noted that 87% of the people visiting the Institute are from Penna., and 52% of that group is from Pittsburgh.[4]

If the preceeding paragraphs answer, "who are they?", the next question is "what do they want?" The AASLH study emphasized the interest of visitors in people, but not necessarily in what made historical figures great. Today's visitors to historical or anthropological sites are intrigued with how their forebearers or other cultures managed all the everyday requirements of living. This is the search for cultural roots, for continuity through generations. Freeman Tilden reiterated that, "the visitor's chief interest is in whatever touches his personality, his experience and his ideals."[5] Grant Sharpe's book, Interpreting the Environment, notes more recent research indicating visitors want informality and social interaction.[6] They want information, but are not at the site to prepare for a test. They want understandable information in a relaxed atmosphere.

Now that the audience and its needs have been delineated, how do we, as professional educators, correlate this with the material we want to transmit, the limited resources we command, the educational objectives and methodologies that we have developed and utilized over the years?

We must use our visitors' preconceived notions and expectations to our advantage. The environmental educator at a nonformal site must know how to use the fact that people expect to "have fun" at a park. For example, develop a program which fulfills its covert educational purpose as well as its overt recreational one. Program development must start with visitors' expectations and then take the visitors several steps beyond so that they are stimulated "toward a desire to widen their horizon of interest and knowledge, and to gain an understanding of the greater truths that lie behind any statement of fact."[7]

This is not as simple as it sounds. Our concerns as educators recently have revolved more around our informational objectives and resources than our visitors' needs. We have forgotten that casual visitors to nonformal education sites, whether they be parks, museums, nature centers, etc., view these sites as places to spend leisure time. They rarely arrive with preconceived expectations to learn. If learning is to occur, therefore, it must be presented within the framework of the visitor's expectations--and these may include satisfaction of curiosity, recreational experiences, etc. Without this marriage of expectations and programs, the educator will be met with resistance. And his or her long hours of research, organization, and program development will be fruitless.

This does not mean, however, that non-formal environmental education programs must be predominantly concerned with the "fun" element. First and foremost, they must be educationally sound and relevant to the environmental concerns of conservation, ecological stability, and protection. Tilden provides the resolution "...if you make your target a whole man who seeks new experience, relaxation, adventure, imitation of friends who have told him, 'you mustn't miss it', curiosity, information, affirmation, and one thousand odd other motives, you cannot fail to hit. He may be there for the explicit hope that you can reveal to him why he is there."[8]

This is excellent inspiration but unfortunately does not give us specific guidance. However, if we review audience data and examine our resources, one thing can come clear: the non-formal environmental education site can and must become a master of the "soft sell" approach. Given audience expectations and preconceptions, programs utilizing the hard sell, issues-orientation approach are extremely difficult to put into practice when, what the audience desires above all, is "informality and social interaction." However, by developing programs that address the "harder" issues through the "softer" ones, we can get a message across to our visitors in a way that they will accept. A field trip to a natural site can often do more to insure the site's protection than slide presentations on land use, especially when the educational program is non-formal and the audience is casual. The realization that a site requires special protection to insure its continuity will often cause more concern for the environment among visitors than the most overwhelming informational material.

There are many kinds of educational programs for many kinds of audiences. But what we, as non-formal environmental educators, must remember, is that our audience can always get up and leave.

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4. A Final Report of a Visitors Survey of Carnegie Institute, prepared by Ketchum, MacLeod & Grove, Inc., Pittsburgh, PA, 1976, pp. 10-20.
5. Tilden, Freeman. Interpreting Our Heritage, 3rd ed., University of North Carolina Press, Chapel Hill, 1977, p. 11.
6. Sharpe, Grant W. Interpreting the Environment, John Wiley & Sons, New York, 1976, p. 9.
7. Tilden, p. 17.
8. Ibid., p. 45.

FREDERICK T. TETLOW, R.D. 1, Box 337, Branchville, NJ 07826

Fungi of the PEEC Environs

An introduction to the variety of fungi growing in the PEEC area was presented, emphasizing the main families of mushrooms and other fungi, their identification and ecological significance. Examples of parasitic and saprophytic fungi and fungi living in symbiotic relationship with other plants, such as Lichens, were pointed out. The role played by the fungi in the economy of the woodland habitat was emphasized.

Some of the major families of fungi observed were the gill fungi (Agaricaceae), the pore fungi (Polyporaceae), cup fungi (Pezizaceae), coral fungi (Clavariaceae), and puffballs (Lycoperdaceae).

The fungi are an often overlooked and misunderstood group of plants. They are, however, fascinating and very important. Many edible varieties are found in any region, but the amateur must be certain of identification in this regard. Positive identification of the most deadly mushrooms in the genus Amanita was a prime concern of this session and a few common edible mushrooms were pointed out as a means of comparison.

TIMOTHY TOY, Grand Island School District, 26 Fuller St., Tonia, NY 14150

The Development of Ecology Island (Eco Island)

The aquisition and development of a site to be used as an outdoor study facility was the subject of this slide-movie-lecture presentation. A description of the available parcel of property and the leadership which was responsible for acquiring the site was discussed.

The initial goals included the legal aspects involved and garnering the capital to restore the property. A committee was organized to plan the development and restoration of the site. Establishing nature trails, digging a half-acre pond, planting trees and setting up a classroom were a few of the accomplishments over a period of time. Curriculum development and teacher workshops were used as a necessary part of maximizing utilization of the site for teachers in all areas.

The present activities at the Eco Island site, including the organization of a student tour guide service for the entire school district, concluded the program. A question and answer period followed.

ERNIE TURNER, CoManager of the Local School Development Project and member of the N.Y. Urban Coalition Education Program Staff, 1270 Ave. of the Americas, New York, NY 10020

Local School Development: The Human Environment

The New York City public school system is presently engaged in a unique change strategy, the Local School Development Project. The project's long range goal is to improve student achievement through the involvement of the many constituencies at the local level—students, staff, parents, administrators and community. Elected representatives of these groups form a planning team who are responsible to the principal for the development of a written comprehensive plan for their school. A fundamental value of this project is ownership. Those people who have a stake in the school should also have a voice and it should be legitimate and formal. The planning team is that voice. The hierarchy of the public school system, the district and the central Board, then become more responsive to needs and goals of the local school and not the other way around.

This presentation included: the history of the project; its philosophic value base; the various project components; and a perspective from a school planning team member.

ARTHUR WATRES, Lacawac Sanctuary, 5-29 Estate Nazareth, St. Thomas, U.S. Virgin Islands 00801

Environment: Sound Economics or Lost Cause?

Using the format of discussion and a slide presentation, this session began by indicating the complexity and stability of undisturbed environments. Over the centuries, human land use practices have tended to simplify the environment and destroy this stability. Over-use and monoculture have created and are creating vast areas of desert. The presentor showed several examples of desertification current both in the U.S. and globally. Further discussion centered on land use as related to military activity, the search for the "good life", security, the profit motive, the American energy and materials intensive economy and related environmental problems. Concentrating on economic considerations, especially the hidden cost involved in development and technology, the discussion moved into consideration of the serious environmental concern of survival vs. a quality existence and the sentimentality for "Nature" which blights the amateur eco-activist's effectiveness.

The session concluded with a survey of the ways in which open spaces serve man's needs.

MARY THERESA WEBB, Conservation Consultants, 417 Thorn St., Sewickley, PA 15143

Energy Education in Every Classroom

The presentation included a description of the 3 credit graduate education course for teachers taught by Mr. Chesebrough, of the Conservation Consultants Staff, at the Penn State Beaver campus as well as

the 1 credit in-service training course which has been presented to teachers in Workshops in Southwestern Penna. Selected classroom activities for grades K-12 were shared with the participants. These activities, and a specially prepared slide presentation, constituted the hour long program. Some of these activities are entitled: "The Brite Lite Power Co. vs. People and Their Environment", "The Natural Laws as seen through Poetry", "Arab Oil Politics", and "Energy Games in the Outdoors".

CHARLES R. WHITE, Greencastle-Antrim School District, 370 South Ridge Ave., Greencastle, PA 17225

Tayamentasachta, A Center for Environmental Studies

Tayamentasachta - A Center for Environmental Studies is a validated environmental education program, acting as a demonstration and model program for school districts throughout Penna. The intent of Tayamentasachta is to bring an awareness, appreciation and understanding of the environment and our cultural heritage in order that man can become a better steward of the planet earth.

The Center is utilized by students (K-12) from the Greencastle-Antrim School District, community groups, the surrounding school districts, and college participants. Activities and programs are interdisciplinary encompassing all subject areas (science, math, English, social studies, home economics, art, vocational training, etc.). High school students, teachers, parents, and citizens from the community are utilized to conduct activities and programs. Inservice programs and workshops are offered in such areas as: Ecology, Energy Conservation-Education, Environmental Education, Site Development, Wildlife Management, Gardening, Crafts.

Tayamentasachta is a 60 acre farm including an 1840 farm house (houses office, labs, classrooms, craftroom, historical period rooms and a historical and natural history museum), barn, two ponds, woodlots, fields, orchard, walnut plantation, garden areas, self guiding nature trails, and trout nursery.

Tayamentasachta is a unique program in that it is solely owned, operated and maintained by the Greencastle-Antrim School District, Greencastle, Penna.

BRUCE WOOD, Engineer, Westinghouse Electric Corp.

Nuclear Energy: Information & Perspectives

The presentation included coverage of the following topics relevant to nuclear energy: safety, economics and need for power, environmental impact, transportation & waste disposal. The speaker answered questions the participants had following the presentation and distributed educational materials.

CONFERENCE EVALUATION COMMITTEE REPORT

MATTHEW HICKEY, Chairman
Project KARE
Blue Bell, PA 19422

This report summarizes the findings of the "Conference Evaluation," (yellow form) which was included in the conference materials provided to the 178 registrants. The evaluation design was based on a five-point semantic differential with "3" representing neutral feelings toward the item. A total of 36 items appeared on the form, generally corresponding to three areas of interest: General and Concurrent Sessions; Overall Conference and Site; and Exhibitors/Open University/Field Trips. In addition, one-quarter of the form contained blank space for respondents to provide suggestions for next year's conference as well as general comments. A sample of the evaluation form is included at the end of this report.

The purposes of the evaluation design were to:

1. Identify key strengths and weaknesses of the conference,
2. Solicit general comments which might reveal insights not elicited by the evaluation design, and
3. Obtain potentially useful suggestions for next year's conference.

A total of 60 evaluation forms were submitted by conferees. This represented a 34% return which should be regarded as an excellent return for a national conference. Average ratings were tabulated for each of the 36 items. The lowest average rating was 3.18 and the highest was 4.59. The range was 1.41 which was divided into 3 equal intervals of .47.

General Comments were analyzed using a descriptive analysis system containing three primary descriptors: Constructive, Flatulent, and Counter-Productive.

Finally, Suggestions for next year's conference were culled from the responses and are listed in the last section of this report.

A. STRENGTHS AND WEAKNESSES

Responses to each of the 36 evaluation items were averaged, and

the resulting average ratings are contained in Table 1:

Table 1
AVERAGE RATINGS OF ITEMS

#	ITEM STATEMENT (Paraphrased)	# of Responses	Average
1.	Sessions sufficiently explained	59	4.03
2.	Sequence of sessions chosen wisely	58	4.00
3.	Pairings of concurrent sessions effective	57	3.49
4.	Length of general sessions adequate	57	3.98
5.	Length of concurrent sessions adequate	56	3.86
6.	Interesting presentations	57	3.89
7.	Participant interaction right in concurrents	59	3.68
8.	Topics of sessions relevant	58	3.84
9.	Content of general sessions valuable	57	3.43
10.	Content of concurrent sessions valuable	57	3.88
11.	Sufficient handouts concurrents	59	3.85
12.	General sessions gave useful ideas	58	3.47
13.	Concurrent sessions, practical ideas	58	3.98
14.	Stimulated interest in E, E, and A	59	4.14
15.	Good overall feelings	59	4.34
16.	Conference facilities adequate	59	3.85
17.	Lodging was satisfactory	57	3.40
18.	Meals were satisfactory	59	4.59
19.	Conference location was good	60	4.35
20.	Registration was easy	60	4.25
21.	Registration fee reasonable	59	4.22
22.	Sufficient free time available	59	3.75
23.	Overall reaction to conference good	59	4.29
24.	Time in coming to conference well-invested	59	4.31
25.	Pre-conference materials adequate	60	3.37
26.	Home groups effective	55	3.18
27.	Exhibits relevant to conference theme	60	3.37
28.	Exhibitors provided useful info	60	3.72
29.	"Give-away" materials helpful	60	3.88
30.	Open University enhanced theme	54	3.85
31.	"Teachers" presented interesting info	52	4.02
32.	Open Univ. should be permanent	52	3.96
33.	Open Univ. at suitable time	54	3.81
34.	Field trip interesting	54	4.30
35.	Leaders of field trips knowledgeable	54	4.06
36.	Field trips accurately described	55	3.76

From an average high of 4.59 to an average low of 3.18, the 36 items were grouped in three equal intervals of .47. As a result, there were 6 items in the lower interval which are regarded as weaknesses of the conference. Meantime, 9 items were contained in the upper interval,

and shall be regarded as strengths of the conference. It must be noted, however, that an average rating of 3.18 is a slightly positive rating. THERE WERE NO ITEMS THAT RECEIVED A NEGATIVE AVERAGE RATING.

Strengths

The following 9 items were highly-rated by the responding conferees, and are listed in decreasing order of average rating:

1. The meals were satisfactory (Item #18)
2. The conference location was good (Item #19)
3. My overall feeling about the conference was good (Item #15)
4. My time in coming to the conference was well-invested (Item #24)
5. My field trip was interesting (Item #34)
6. My overall reaction to the conference is good (Item #23)
7. Registration for the conference was easy (Item #20)
8. The registration fee was reasonable (Item #21)
9. My interest in environment, education, and action has been stimulated by this conference (Item #14)

In effect, the conference respondents felt good about the conference; said registration was easy and inexpensive; liked the conference site; enjoyed the meals and free time; and were stimulated by the conference events such that time spent in attending the conference was well-invested.

Weaknesses

The following 6 items were down-rated by the responding conferees, and are listed in increasing order of average rating:

1. The home groups were effective (Item #26)
2. Pre-conference materials were adequate (Item #25)
3. The lodging was satisfactory (Item #17)
4. The content of the general sessions was valuable (Item #9)
5. The general sessions gave me some ideas which I can use (Item #12)
6. The pairing of concurrent sessions was effective (Item #3)

In effect, the conference respondents down-rated the lodging; thought the home groups were ineffective; said pre-conference materials were inadequate; decided the content of the general sessions was limited in value; and disliked the pairing of concurrent sessions.

Since the average ratings for all items were positive, the above generalizations for both strengths and weaknesses contain defacto elements of subjectivity and interpretation introduced by this evaluator. Nevertheless, it is apparent that meals, field trips, and the overall conference program were top-ranked items; while the home groups, general sessions, and lodging were bottom ranked items.

To further analyze the rankings, an item-by-item sort of responses was performed and the results are contained in Table 2. In addition, a Strength of Feeling Ratio (SOFR) was calculated for each item (see Table 2).

Table 2
RESPONSE ANALYSIS OF SELECTED ITEMS

#	Paraphrased item	AVERAGE RATING	# OF "1's"	# OF "2's"	# OF "4's"	# OF "5's"	SOFR*
18	Meals were satisfactory	4,59	0	2	18	39	00
19	Conference location was good	4,35	0	3	28	28	59,0
15	Good overall feelings	4,34	1	1	22	30	10,8
24	Time in coming to conference well-invested	4,31	0	2	29	25	18,7
34	Field trip interesting	4,30	0	1	27	22	12,5
23	Overall reaction to conference good	4,29	0	2	26	26	10,8
20	Registration was easy	4,25	2	1	30	25	29,0
21	Registration fee was reasonable	4,22	0	3	27	24	10,8
14	Stimulated interest in E, E, and A	4,14	0	3	27	21	6,4
26	Home group effective	3,18	1	10	16	3	1,3
25	Pre-conference materials adequate	3,37	5	7	33	3	4,0
17	Lodging was satisfactory	3,40	5	8	19	12	3,4
9	Content of general sessions was valuable	3,43	2	7	26	5	2,2
12	General sessions gave useful ideas	3,49	2	2	28	3	1,6

*SOFR=Strength-of-Feeling Ratio= $\frac{\#\text{ of Strong Feelings}}{\#\text{ of No Strong Feelings}}$

It is interesting that the SOFR's for the 6 "down-rated" items reveal mixed feelings about the items. For example, concerning item #26: "home group was effective," the SOFR was 1.3 which indicates marked ambivalence regarding the effectiveness of the home groups.

On the other hand, the SOFR for item #19: "Conference location was good" was 59,0, which reveals a preponderance of strong feelings regarding that statement.

B. GENERAL COMMENTS

Fully 44 or 73% of the respondents provided comments on the evaluation form. The breakdown analysis for the comments is contained in Table 3.

Table 3
ANALYSIS OF GENERAL COMMENTS

Category	Number
Constructive	17
Flatulent	13
Counter-Productive	14
No Comment	16
Total	60

The general comments, especially the counter-productive ones, correlated extremely closely to the weaknesses of the conference detailed above. Concerns over housing and concurrent sessions were voiced frequently. Conversely, the constructive comments were of a high quality and focused directly on viable suggestions for next year's conference.

C. SUGGESTIONS FOR 1980 CONFERENCE

Contained below are various suggestions for improving the conference. The suggestions are quoted verbatim, and are listed in no particular order which might signify priority or importance:

1. Have graduate student survey past and future CEA conference participants for "audience analysis."
2. Send list of pre-registrants to attendees prior to conference.
3. Keep children's programs.
4. Schedule more free time (which might be used to experience the facilities and the programs of the conference host).
5. Allow more time for discussion and interaction.
6. Provide better travel directions to conference sites, including alternate routes.
7. Possible themes for conference: Wetlands, land use management; holistic environmental education; back-to-basics; world hunger.
8. Reduce number of concurrent sessions and have them repeat on subsequent days of conference.
9. Schedule workshop on how to write a proposal for grants, including info sources and resources.
10. Have concurrent sessions which advise participants to adopt advocacy stances concerning federal and state legislation.

CONFERENCE EVALUATION

CEA NATIONAL CONFERENCE
August 12-16, 1979
Pocono Environmental
Education Center

Directions: Please complete and return to home group leader at the conclusion of the conference. Read each statement carefully and circle the number that is best descriptive of your reaction to that statement. Your written comments are also welcomed by the planning committee.

Key:
1. Strongly Disagree (SD)
2. Disagree (D)
3. No Strong Feelings (NSF)
4. Agree (A)
5. Strongly Agree (SA)

GENERAL AND CONCURRENT SESSIONS

		SD	D	NSF	A	SA
1.	The sessions were sufficiently explained in the workshop program.	1	2	3	4	5
2.	The sequence of the sessions was chosen wisely.	1	2	3	4	5
3.	The pairing of concurrent sessions was effective.	1	2	3	4	5
4.	The length of the general sessions was adequate.	1	2	3	4	5
5.	The length of the concurrent sessions was adequate.	1	2	3	4	5
6.	The presentors made the presentations interesting.	1	2	3	4	5
7.	The degree of participant interaction in concurrent sessions was about right.	1	2	3	4	5
8.	The topics of the general and concurrent sessions were relevant.	1	2	3	4	5
9.	The content of the general sessions was valuable.	1	2	3	4	5
10.	The content of the concurrent sessions was valuable.	1	2	3	4	5
11.	There were sufficient handout materials at the concurrent sessions.	1	2	3	4	5
12.	The general sessions gave me some ideas which I can use.	1	2	3	4	5
13.	The concurrent sessions offered me some practical ideas I can use in my everyday work.	1	2	3	4	5

OVERALL CONFERENCE AND SITE

14.	My interest in environment, education, and action has been stimulated by this conference.	1	2	3	4	5
15.	My overall feeling about the conference was good.	1	2	3	4	5
16.	Conference facilities were adequate.	1	2	3	4	5
17.	The lodging was satisfactory.	1	2	3	4	5

OVERALL CONFERENCE AND SITE (con't)

		SD	D	NSF	A	SA
18.	The meals were satisfactory.	1	2	3	4	5
19.	The conference location was good.	1	2	3	4	5
20.	Registration for the conference was easy.	1	2	3	4	5
21.	The registration fee was reasonable.	1	2	3	4	5
22.	Sufficient free time was available.	1	2	3	4	5
23.	My overall reaction to the conference is good.	1	2	3	4	5
24.	My time in coming to the conference was well invested.	1	2	3	4	5
25.	Pre-conference materials were adequate.	1	2	3	4	5
26.	The home groups were effective.	1	2	3	4	5

EXHIBITORS/OPEN UNIVERSITY/FIELD TRIPS

27.	The exhibits were relevant to the conference theme.	1	2	3	4	5
28.	The exhibitors provided useful information.	1	2	3	4	5
29.	The "give-away" materials of exhibitors will help.	1	2	3	4	5
30.	The Open Univeristy enhanced the conference theme.	1	2	3	4	5
31.	The "teachers" in the Open University presented interesting information.	1	2	3	4	5
32.	The Open Univeristy should be a permanent part of CEA Conference.	1	2	3	4	5
33.	The Open Univeristy was conducted at a suitable time.	1	2	3	4	5
34.	My field trip was interesting.	1	2	3	4	5
35.	The leaders of the field trips were knowledgeable and friendly.	1	2	3	4	5
36.	The field trips were fairly and accurately described in the program.	1	2	3	4	5

GENERAL COMMENTS (PLEASE INCLUDE SUGGESTIONS FOR NEXT YEAR'S CONFERENCE):

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Our thanks to the following exhibitors:

Conference Book Service, Inc.

Conservation Consultants

Joseph Bharat Cornell

J. N. "Ding" Darling Foundation, Inc.

Environmental and Outdoor Education Materials Co.

ERIC/SMEAC Center for Science, Mathematics, and Environmental Education

Eureka Camping Center

Institute of Scrap Iron and Steel, Inc.

Heesing Nature Center/Monroe County Conservation District

Morris Arboretum, Awbury Arboretum, and Pennsylvania Horticultural Society

Penna. Recreation and Park Society

Penna. Trappers' Association

Pinchot Institute for Conservation Studies

U.S. Dept. of Agriculture--Soil Conservation Service

Wards Natural Science Establishment, Inc.

Westinghouse Electric Corporation

Wild Turkey Federation

CONSERVATION EDUCATION ASSOCIATION

Annual Meeting
August 15, 1979

(79 members attending)

1. Call to Order: President Myshak called the 1979 annual meeting of the Conservation Education Association to order at 4:35 p.m.

2. Secretary/Treasurer's Report:

   A. Minutes of the 1978 CEA Annual Meeting: The minutes were distributed and read by R. Darula. It was moved and seconded to accept the minutes as presented. The motion carried.

   B. Audit and Finance Report: R. Darula read the auditor's report. It was moved and seconded to accept the auditor's report as read. The motion carried. R. Darula read the Statement of Receipt and Disbursements for the 1978-79 fiscal year as distributed to the members at the meeting. (See attached statement.) It was moved and seconded to accept the Statement of Receipt and Disbursements as presented. The motion carried.

   C. Membership Assessment for Alliance for Environmental Education: R. Darula reported that the CEA board of directors recommend that we continue to add a special assessment to CEA active membership dues to support the Alliance for Environmental Education. Therefore, the dues for active membership would remain at nine dollars for one year. It was moved and seconded to accept this special assessment proposal as stated. The motion carried.

   D. 1979-1980 Budget: R. Darula distributed and read the proposed budget for the next fiscal year. (See attached 1979-1980 budget.) It was moved and seconded to accept the budget as presented. The motion carried.

   E. Budget Discussion Comment: The board of directors were advised to take into consideration in future budget proposals that all items listed as postage be listed in specific categories. (Reference made to the item listed in "4.4 Postage" in Schedule B of the budget.)

3. Alliance for Environmental Education: J. McSwain reported on the membership, goals and activities of the Alliance. McSwain stressed that the Alliance was organized to join together non-governmental organizations having common goals to encourage the development, implementation

and coordination of effective environmental education programs and communicate and explore cooperative ventures with other entities in the field. McSwain distributed a brochure about the Alliance and as President invited members to feel free to contact her for further information.

4. Committee Reports:

A. By-Laws: D. Szuhy distributed copies of the CEA Board of Directors recommended revisions to our By-Laws. President Myshak reviewed the proper procedures according to our constitution regarding a proposed By-Law change. It was moved and seconded to accept this report as presented. The motion carried. Szuhy also discussed the recommendation for having the annual membership dues for retired members be four dollars. It was moved and seconded to establish the dues rate for retired members as presented. The motion carried.

B. Annual Conference Committee Report: D. Bennett reported that no decision has been made concerning future conference sites after the 1980 convention in Ada, Oklahoma. The location for the 1981 convention that is presently being further explored is in the State of Maine. Bennett stated that the board will be making this decision at its January 1980 meeting. The theme for 1981 that is being considered is: Issues for the 80's with a specific emphasis on the coastal regions and marine environments. Bennett also reported that a handbook for conference planning is now being revised for publication with the possibility of being sold to other organizations. Future conferences will continue to allow the opportunity for CEA to communicate and promote a feeling of working together with groups similar to ours.

C. Membership Services: A. Linder distributed a report during the 1979 conference to allow time for membership input as to present services, changes, etc. Linder read the report of the membership committee as proposed by the board as a result of discussions during the week. It was moved and seconded to accept this report. The motion carried.

D. Awards: D. Toomsen reported that the awards would be presented at the conference banquet.

E. Resolutions: D. Toomsen read five resolutions that were each moved and seconded to be accepted as presented except for resolution two which was to be amended to include the soil conservation districts that provided the refreshments for the 1979 CEA conference. Each motion carried. (See attached resolution copies.)

F. Futures Committee: B. Hammond reported that the board has approved the development of two major CEA projects. The Human Habitat Project is focused on 8th or 9th grade students and is designed to

meet the environmental, ethical and basic studies needs of these students. This project will provide a comprehensive environmental education program and has been submitted to the U. S. Office of Education for a basic grant assistance. The second project is the development of a second slide-tape presentation designed to be a continuation of the first presentation. The title will be: Outdoor Classroom Ideas.

President Myshak thanked each committee member for their work and their presentations. Myshak especially thanked B. Hammond for all the many hours that he has spent in the last year in writing the Human Habitat Proposal.

5. Old Business: None.

6. New Business: President Myshak reported that the board has appointed Mary Hamilton of Greenfield, Ohio to the position of Corresponding Secretary of CEA. He thanked Mary for her willingness to assume this responsibility.

Myshak also outlined the services that are and have been provided to CEA by the University of Wisconsin in Green Bay, Wisconsin. He stressed that the Secretary/Treasurer's position involved much time and effort and would be very costly if CEA were paying for these services. As a result, Myshak suggested that in appreciation for the services provided to CEA by the University through the support of its Chancellor, a special award be given to the University of Wisconsin-Green Bay.

President Myshak indicated that if this suggestion was approved then he would take on the responsibility of working out the details of the award and make sure it was delivered. It was moved and seconded to present a special award to the University of Wisconsin-Green Bay in appreciation for its support as discussed. The motion carried.

7. Election Results: R. Darula reported that 153 votes were cast and that the following individuals were elected.

President -	Richard Myshak of Washington, D.C.
2nd Vice-President -	Dean Bennett of Maine
Directors-Class of '82 -	Alice Linder of South Carolina
	Esther Railton of California

8. Installation of New Officers and Board of CEA: Past President Clarence Billings conducted the installation.

9. Adjournment: It was moved and seconded to adjourn the 1979 Annual Meeting of CEA. Motion carried. Time of adjournment, 6:24 p.m.

Robert A. Darula
CEA Secretary/Treasurer

CONSERVATION EDUCATION ASSOCIATION

Statement of Receipts and Disbursements

July 1, 1978–June 30, 1979

CASH ON HAND (7-1-78)	$ 9,947.17
ADD: Receipts	7,872.99
LESS: Expenses	(4,906.90)
CASH ON HAND (6-30-79)	$12,913.26

ASSETS

	7-1-78	6-30-79
Checking Account	$ 333.70	$ 1,030.05
Savings Account	1,592.51	3,359.49
Savings Account	8,020.96	8,523.72
TOTAL ASSETS	$9,947.17	$12,913.26

Richard W. Presnell
CEA Sec/Treas.

CONSERVATION EDUCATION ASSOCIATION

Schedule A 1979-80

Current Revenues

	Category	Amount Budgeted
1.1	Annual Conference	$ -0-
1.2	Publications-Royalties	-0-
1.5	General Services to Members	
	1.5.1 Sales	100.00
	1.5.2 Slide Tape Project	4,250.00
	1.5.3 Miscellaneous	-0-
1.6	General Membership Campaign	
	1.6.1 Life Members	250.00
	1.6.2 Active Members	2,800.00
	1.6.3 Student Members	220.00
	1.6.4 Organizational Members	800.00
	1.6.5 Sustaining Members	100.00
3.2	Alliance for Environmental Education	350.00
4.5	Secretary-Treasurer Operation	
	4.5.1 Bank Account Interest	600.00
	4.5.2 Transfer from Savings	-0-
6.1	Donations	-0-
	TOTALS	$9,470.00

CONSERVATION EDUCATION ASSOCIATION

Schedule B 1979-80

Current Expenditures

	Category	Amount Budgeted
1.1	Annual Conference	
	1.1.1 Expenses for Conf. Coord.	$ -0-
	1.1.2 Advance to Host Institution	100.00
	1.1.3 Annual Awards	50.00
	1.1.4 Conf. Expenses - General.	100.00
1.2	Publications	
	1.2.1 Supplement to Bibliography.	600.00
	1.2.2 Other Publication	500.00
	1.2.3 Postage	150.00
1.3	Newsletter	
	1.3.1 Printing.	500.00
	1.3.2 Postage	250.00
1.4	Packet Service	
	1.4.1 Supplies.	100.00
	1.4.2 Postage	200.00
1.5	General Services to Members & Non-Members	
	1.5.1 Supplies.	50.00
	1.5.2 Postage	50.00
	1.5.3 Slide Tape Project.	2,400.00
1.6	General Membership	
	1.6.1 Printing.	250.00
	1.6.2 Supplies & Labor.	25.00
	1.6.3 Postage	50.00
2.1	Membership Campaigns	
	2.1.1 Supplies & Printing	250.00
	2.1.2 Postage	100.00
3.1	Memberships in Other Organizations	-0-
3.2	Alliance for Environmental Education	
	3.2.1 Expenses for CEA Representatives.	-0-
	3.2.2 Assessment for Alliance Support	100.00
	3.2.3 Special Membership Assessment	350.00
4.1	Insurance.	250.00
4.2	Accounting Services.	150.00
4.3	Supplies & Materials	250.00
4.4	Postage.	525.00
4.5	Secretary-Treasurer's Operations	500.00
4.6	Board of Directors	
	4.6.1 Expenses to attend Board Meetings	3,000.00
	4.6.2 Miscellaneous	-0-
4.7	President's Miscellaneous Expenses	-0-
	TOTALS	$10,850.00

RESOLUTION: Environmental Education Act

Whereas: The Environmental Education Act (passed by the 91st Congress of the United States and signed by the President of the United States) has become an integral part of the U. S. Office of Education, and

Whereas: This act has been funded since Fiscal Year 1971, and

Whereas: The activities and programs sponsored by this act have significantly furthered environmental education experience in the nation both within the public formal sector and within community based environmental education.

Whereas: Solutions to environmental problems, through education programs, is an essential basic element of total educational enterprize, and

Whereas: Since the 97th Congress, through its conference committee negotiations has deleted funds for this act in Fiscal 1980,

Therefore: Be it resolved, that the members of the Conservation Education Association immediately write to their respective U. S. Representatives and Senators to urge them to restore the appropriation to carry out the intent of the Environmental Education Act of 1970,

(1). By re-establishing the 3.5 million dollars through a supplemental budget request to assure the availability of funds in FY 1980 and inclusion of funds in the FY 1981 budget request, and

(2). By providing for additional administrative (Salary and Expense) funds since FY 1980 funds, if provided would not be available until the last half of the fiscal year.

Therefore: Be it further resolved, that the members of the Conservation Education Association direct its officers to communicate with the following:

President
Appropriate Committee Members of Congress
Secretary of H.E.W.
Commissioner of Education
Director of the Office of Management and Budget

RESOLUTION: President Carter's 1979 Message on the Environment

Whereas: On August 2, 1979 President Carter issued his second Environment message to The Congress of The United States, and

Whereas: This message incorporates a series of comprehensive new initiatives dealing with such specific areas as; coastal management, transportation, soil conservation, acid rain, public lands, hazardous wastes, pollution and other imperative environmental concerns, and

Whereas: The message calls for action by Congress and Federal Agencies responsible for management of the public domain, and

Whereas: The achievement of the goals established in this message requires a high degree of public understanding and participation leading to a more environmentally literate citizenry, and

Whereas: The Conservation Education Association shares the President's expression for the environment and vital issues of the 1980's,

Therefore: Be it resolved, that the members of the Conservation Education Association in attendance at its 26th Annual Conference, held August 12-15, 1979, recommends to the President and his Executive staff that environmental education which addresses each of these initiatives in a comprehensive way be included which will support educational endeavors, and

Therefore: Be it further resolved, that funds be provided to the various agencies to assist the President in his efforts to bring the problems of government to the citizens through such a comprehensive environmental education program.

Pocono Environmental Education Center
R. D. 1, BOX 246, DINGMANS FERRY, PENNSYLVANIA 18328

PHILOSOPHY

Our generation has witnessed unprecedented economic growth and technological progress which have caused severe social and environmental problems. As the previous pattern of dealing with these crucial problems on a fragmentary basis is no longer workable, it is necessary to implement new kinds of education as an attack on the world's environmental crisis. At PEEC, a new kind of education is being implemented – environmental studies. It seeks to develop the new knowledge, skills, values, and attitudes necessary to improve the relationship of man with nature and man with man.

In terms of content, environmental studies at PEEC is a process which is adapted to many public, social, artistic, and academic interests. Exposure to the process may form a basis for a creative work by a person in the arts or an environmental application in the work of a group leader. Whatever direction an individual's interests may take, through formal and non-formal educational activities, PEEC aims to educate the general public to be aware of, and concerned about, the environment and its associated problems.

Our special thanks to the Conference Committee Chairpersons who worked so hard to make the Twenty-Sixth National Conference a success.

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